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Environmental Products & Services
America's Industrial Heartland

CANADIAN CONSULATE
CLEVELAND/PITTSBURGH/CINCINNATI

MARKETPLACE 1990

EDITORIAL NOTE:

The format of this report, while somewhat unorthodox, strives to present not only the critical environmental issues within our Consulate's region, but also to emphasize the immediacy and priority of these issues to the local population, media, and political forces.

We felt that recent and daily articles from the major periodicals within our territory could best report the regional environmental story. Over three-fourths of the enclosed articles were written in August and September 1990. The sheer volume of "environmental issues" articles is a clear indication of the present importance of this topic, and further serves as a supportive correlation to the existing marketplace of needed technologies and solutions.

Matthew Share
Canadian Consulate
Pittsburgh, PA

Environmental Products and Services
Marketplace - America's Industrial Heartland
October 1990

The states of Ohio, Kentucky, West Virginia, and Western Pennsylvania are serviced by the Canadian Consulate located in Cleveland, Ohio, and its associated Canadian trade offices in Pittsburgh, Pennsylvania and Cincinnati, Ohio. One-third the size of Ontario, the territory's population approaches that of Canada's. In addition to being one of North America's industrial heartlands, the region has seen a steady growth in the technology and services sector. Serving as headquarters for over 57 Fortune 500 industrial companies, the area also boasts a broad array of medium- and small-sized technology support firms. Industries such as steel production, metals fabrication, coal production, consumer products, auto production, chemicals, plastics, and industrial machinery have been the manufacturing cornerstone of the area. One of the unfortunate aspects of this strong industrial past is the present pollution control and containment problems. These problems are now a priority, not only in the Consulate's territory, but across the U.S. and the world. Estimates for the environmental products/services industry in the United States indicate a total market size in excess of $100 billion annually. By 1995, this figure is expected to increase to $200 billion annually. This includes services, technologies, and capital goods offered to both public and private markets in four major areas of environmental concern:

- Air pollution ($25 billion)
- Water and waste water ($32 billion)
- Solid non-hazardous waste management, treatment and disposal ($25 billion)
- Hazardous waste management, treatment and disposal ($18 billion).

The overall environmental market is also growing at a rate of 20 to 30 percent annually, although industry segments such as the consulting, analytical, disposal, and remediation are expanding at different rates as they respond to varying regulatory forces.

Clean up and protect our environment, has become the battle cry of the United States. Contrary to past decades, the state of the environment is everyone's concern. Corporate America has realized that successful industry also means cleaner technologies in manufacturing and production. Issues such as recycling, acid rain, ozone depletion, and hazardous and non-hazardous waste cleanup are priority issues on both local and federal levels. Politicians are now responding to the prioritization of environmental issues with the use of regulatory powers. The creation of this growing and changing market is a direct response to America's activist concern. A recent U.S. Environmental Protection Agency (EPA) report indicated little concurrence among industry representatives regarding what is the "worst of the worst" of America's present environmental problems. Problems identified as requiring the greatest level of response include:

A. Air Pollution
    1. Air toxics
    2. Acid rain
    3. Greenhouse gases/ozone depletion
    4. Incineration emissions
    5. Factory emissions
    6. Clean coal development/technology

B. Hazardous Waste
    * Over 30,000 hazardous waste sites have been identified by the U.S. EPA throughout the United States (many in the Ohio/Pennsylvania/West Virginia/Kentucky region).

    1. Remediation/detection analysis technology
    2. Site assessment methods
    3. Waste treatment
        a) Detoxification and stabilization projects
        b) Recycling programs

C. Municipal Solid Waste
   1. Land use and abuse problems
   2. Industrial recycling (steel/plastic/aluminum)
   3. Combustion of municipal solid waste (disposal of gases/ashes)

D. Water
   1. Groundwater cleanup programs
   2. Water purification -- analysis technology
   3. Industrial water treatment
   4. Bio-remediation (oil/gas spill technology)

These are some of the most basic environmental problems that have been identified as priority needs in the United States. The Canadian Consulate Offices in Ohio and Pennsylvania (and throughout the U.S.) are working closely with private and public sector businesses and organizations to develop avenues that ensure commercially-viable Canadian environmental technology will reach the American market. Technology transfer, joint ventures, licensing, product commercialization assistance, and market strategy identification are just a few of the most important methods for reaching south of the border with new and existing technology. There exist in both Ohio and Pennsylvania organizations (private and public) that facilitate technology transfer and joint ventures within the environmental products sector.

One of the most important regional centers created to facilitate the commercialization of new and existing environmental technology is the National Environmental Technology Applications Corporation (NETAC) located in Pittsburgh, Pennsylvania. With a mandate to identify and assist promising environmental projects, as well as existing but under-utilized technology, NETAC works with both American- and Canadian-based entities through a variety of programs. For example, NETAC has assisted in bringing new environmental technologies into the marketplace through a flexible program of applied research, testing, and demonstration projects. It has also provided regulatory and business development assistance to companies and entrepreneurs, as well as education, training, market strategy assistance, and information exchange programs. NETAC also serves as both a national (U.S.) and international clearinghouse matching new environmental companies with assistance organizations throughout the fifty states. The Canadian Government Trade Office in Pittsburgh, in conjunction with NETAC, recently completed an Environmental Technology Matchmaker Mission, coupling similar Canadian- and Pennsylvania-based firms for a day-long forum that presented market and technology transfer opportunities. NETAC actively searches throughout the United States and Canada to fulfill its mandate of finding successful environmental technology. With the assistance of organizations such as NETAC, as well as others throughout Pennsylvania and Ohio (see attached appendix), the Canadian Government Trade Offices in Pittsburgh, Cleveland, and Cincinnati are making our territory the center of environmental technology commercialization and marketing.

For additional information on exporting your environmental product or services to Ohio/Kentucky/Pennsylvania/West Virginia please contact:

CANADIAN CONSULATE
Illuminating Building, Suite 1008
55 Public Square
Cleveland, OH 44113-1983
TEL: 216-771-0150
FAX: 216-771-1688

Larry Lederman - Head of Consular Post,
Consul and Senior Trade Commissioner
Michael Virr - Consul and Trade Commissioner
Joseph Mikula - Commercial Officer (Trade)

CANADIAN GOVERNMENT TRADE OFFICE
One Gateway Center
Ninth Floor, South Wing
Pittsburgh, PA 15222
TEL: 412-392-2308
FAX: 412-392-2317

Ron McLeod - Consul and Trade Commissioner
Matthew Share - Commercial Officer (Trade)

CANADIAN GOVERNMENT TRADE OFFICE
Suite 1500
250 East Fifth Street
Cincinnati, OH 45202
TEL: 513-762-7655
FAX: 513-762-7802

Jacques Desjardins - Consul and Trade Commissioner
Stephen Pickens - Commercial Officer (Trade)

CANADIAN GOVERNMENT TRADE OFFICE
PITTSBURGH, PENNSYLVANIA

Canadian Government Trade Office
Pittsburgh, Pennsylvania

Through 1978, Western Pennsylvania's reputation as America's industrial heartland was based on levels of production and levels of regional industrial pollution. Past decades have provided towering industries belching smoke and other pollutants into the region's air and water. As the 1970's came to a close, so did this unfortunate polluted picture of the dirty steel city. However, it is not surprising that the state known for its industrial strength as well as its environmental problems should be leading the way in the research, development, and growth of the environmental technology industry. Pennsylvania's leading role in this sector is not by coincidence. Based on some unfortunate statistics, the health of the environment is a major concern to all its residents. For example, Pennsylvania is now ranked fourth in the United States in the production of hazardous waste (more than 2,300 abandoned sites reside within its borders). The state is listed as having the second largest number of U.S. EPA-defined "SUPERFUND" cleanup sites (100). Pennsylvania produces more low-level radioactive waste than any other state--about 200,000 cubic feet each year. Pennsylvania produces over nine million tons of solid trash each year, which is deposited into 77 of the state's remaining landfills -- many of which will be full within the next five years. Of this nine million-plus tons of yearly trash, a mere one percent is recycled. Industries such as steel (coking procedures), coal production and chemical manufacturing continue to produce with less-than-clear environmental concern. The coal industries of Western Pennsylvania, West Virginia, and Kentucky are major regional players, employing thousands with strong political representation in Washington, D.C.

Though the above information paints a seemingly bleak environmental picture, it has spawned an environmental technology industry unsurpassed in the United States. The number of environmental technology product and service companies that have grown up and now thrive in Western Pennsylvania, as well as public/private environmental technology organizations and associations, lend credit to the regional market.

If you are considering entering the U.S. marketplace or expanding to new U.S. regions with an environmental product or service, Western Pennsylvania (Pittsburgh) has provided a proven support network within this sector you should consider.

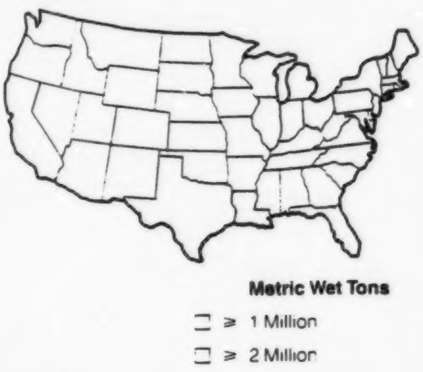
Environmental Technology and Pennsylvania: The Good News and the Bad News

When we talk about Pennsylvania's position in the environmental crisis that seems destined to be with us for years to come, there's good news and bad news to report.

First the bad news.

It's not surprising that the state known for its industrial strength, as well as its environmental problems, should be leading the way in the development and growth of the environmental technology industry.

Hazardous Waste Generation by State



Courtesy CHMR

- More than 2,300 abandoned, potentially hazardous waste sites reside within Pennsylvania borders.
- Of the 1,175 hazardous waste sites on the National Priorities List of Superfund sites, more than 100 are in Pennsylvania.
- Pennsylvania produces more low-level radioactive waste than any other state — about 200,000 cubic feet each year.
- Most of Pennsylvania's nine million tons of solid trash generated each year is deposited into 77 of the state's remaining landfills — many of which will be full within the next five years.
- Of the state's nine million tons of yearly trash, a mere one percent is recycled.

Bad news, indeed. And Pennsylvania is not alone. Neighboring states like New York, New Jersey and Ohio also shoulder the burden of environmental cleanups and waste disposal problems that are approaching unmanageable proportions.

The bad news: see above. The good news: local firms are taking the lead in ridding the country of its unsightly, and unhealthy, waste problem.

Courtesy Westinghouse Resource Energy Systems Division

Across the country and around the world – particularly in large industrial hubs and densely populated cities – environmental problems continue to escalate.

But there's a silver lining behind this dark, waste-polluted cloud. The seemingly sudden presence of environmental technology firms, and the entry of some big corporate players into the waste management arena, represent a kind of self-help attitude among corporate America. Not only are these companies taking it on themselves to find solutions to current environmental problems, but they're also searching for ways to prevent the same costly mistakes from reoccurring.

Needless to say, these firms have more than environmental protection on their minds. There's money to be made in the cleanup, disposal, detection and monitoring of hazardous materials. A lot of money. And it's not surprising that the state known for its industrial strength as well as its environmental problems should be leading the way in the development and growth of the environmental technology industry.

That's the good news.

On the Map for Other Reasons

What makes Pennsylvania – and more specifically Pittsburgh – such an ideal breeding ground for environmental technology? Aside from the unfortunate fact that our state has one of the highest concentrations of environmental problems, Pittsburgh boasts an academic and business community that few larger cities can match. Although the dire conditions of our landfills and hazardous waste sites are providing the incentive for developing environmental technology, our homegrown resources and established knowledge-bases will put us on the map as recognized leaders in this growing field.

Already, Pittsburgh has spawned a host of companies that have targeted environmental technology as the primary or secondary area of business concentration. Westinghouse Electric Corporation is undoubtedly the largest of the lot. The company has gradually – and quite naturally, it seems – refocused portions of its almost endless pool of talent and resources on the waste management and disposal business.

Westinghouse's early dominance in the commercial nuclear industry gave the company first-hand experience in the containment and disposal of nuclear waste. And now that the production of nuclear power plants has come to a halt, Westinghouse is using its in-house expertise to devise safe, effective methods of nuclear waste disposal to be applied to the cleanup of countless hazardous waste sites across the country.

Another demanding and potentially lucrative segment of the waste management business is municipal solid waste. In fact, a number of the firms profiled in this issue of PITTSBURGH HIGH TECHNOLOGY have established as their mandate the search for better ways to dispose of the nation's municipal waste – more commonly known as garbage. Geo-Con, Chambers Development and the Steel Can Recycling Institute represent a growing contingency of organizations working to bring some kind of order, and expertise, to a process that most of us take for granted: municipal waste disposal. Westinghouse has joined them. Never one to dismiss an opportunity to diversify its already broad business base, the firm is targeting its waste-to-energy incineration systems – as well as its other efforts in solid waste and hazardous waste management – as one of three major growth areas for the future. And the company is not ruling out any potential technologies.

In the words of Pres Rahe, General Manager for Westinghouse's Environmental Services Division, "The environmental business is becoming more technology-intensive. There is no magic fairy dust that will produce an acceptable solution across the board. It is a matter of picking the right technology for each application. So you have to have a large number of arrows in your quiver to be successful in the business."

The Need to Educate

All members of the environmental technology market will agree that their business calls for more than product development. It requires educating the market, as well as the public. Gerald Moore, President of GMD Systems, a small local firm that develops toxic gas detection devices, uses the marketing of his first product as a case-in-point. That product – the Phosgene Badge – is now a standard among many of the country's chemical companies which typically handle or produce potentially toxic gases.

"I personally spent two or three years developing the market, educating the customers, and teaching them how to run the badge system. That was the hard work."

Dr. Edgar Berkey, President of the Center for Hazardous Materials Research (CHMR), agrees. In one sense, CHMR is called on to work as an environmental out-reach and education center of sorts – such as the time it made a presentation to the Bloomfield Citizen's Council on the effects of a nearby train derailment and chemical spill. On the other side of the issue, CHMR officials are also being called on by *Fortune* 500 companies as a third-party, objective voice on environmental issues and technology developments.

Berkey emphasizes that, with ever-changing Superfund Laws and never-ending environmental problems, it's essential that we become more educated. Especially, he says, those of us who produce potentially hazardous waste in small and large companies.

"Often, what is considered hazardous waste by law is not considered hazardous waste by the people who run small companies. Liquid paint that's left in a can is a good example. Technically, to throw that can in the trash is a violation of the law. We're offering companies that may be out of compliance the opportunity to come forward, to learn, and to manage these wastes in accordance with the regulations."

The Future News Outlook

Most recently, CHMR acted with a number of prestigious members of Pittsburgh's academic and business community to encourage the EPA to establish a promising addition to the local environmental technology industry. The mission of the newly formed National Environmental Technology Applications Corporation (NETAC) is to accelerate the commercialization of environmental technologies, not only in Pittsburgh but throughout the country. Backed by more than $9 million of EPA funding, NETAC will act as a middle man between technology development and commercialization – evaluating new technologies, lending assistance in the search for funding, and guiding the project through to commercialization.

Hopes are already running high that NETAC may very well be the turning point for many latent environmental technologies and their hesitant developers who, with a little help, may become the entrepreneurs of the future.

That's more good news for Pittsburgh. ■

Pittsburgh: A Growing Place for Environmental Technology

When Lee Thomas, Administrator of the U.S. Environmental Protection Agency, came to Pittsburgh in October 1987, his day-long agenda was full. He met with Dr. Posvar, President of the University of Pittsburgh, and other senior Pitt officials that morning, had lunch with corporate officers of PPG, Westinghouse, Alcoa, and USX, and spent the afternoon at a meeting hosted by the Center for Hazardous Materials Research (CHMR) at the University of Pittsburgh Applied Research Center in Harmarville, which was attended by environmental managers from a number of local companies.

"By the end of the day, he saw that the Pittsburgh area had a unique combination of private and academic resources, facilities, and working partnerships that could be applied to environmental technologies," recalls Dr. Edgar Berkey, President of CHMR. A year later, that favorable impression helped the University of Pittsburgh receive a matching grant from the EPA to establish the National Environmental Technology Applications Corporation (NETAC) in Pittsburgh. Its mission: to accelerate the commercialization of environmental technologies.

"We think the combination of CHMR and NETAC is going to be a magnet for attracting companies and individuals in various environmental technology fields to locate near Pittsburgh," says Berkey. "The environmental focus we have created will have many direct and indirect economic benefits to the region and can help its revitalization. NETAC is a new approach to getting environmental technologies commercialized. There is nothing like it in the country."

Together, CHMR and NETAC promise to become key players in the urgent national effort to improve our management of hazardous materials and wastes. Few places feel the urgency of that effort more keenly than Pittsburgh, with its central location in the Northeastern industrial belt.

"The Northeast region is the largest generator and has the greatest concentration of hazardous waste sites in the United States," says Berkey. "The problems are here, and it's appropriate that we take the lead in solving them here."

A Trust for Public Service

CHMR was founded in 1985 as a not-for-profit subsidiary of the University of Pittsburgh Trust. According to Berkey, "Dr. Posvar set up the Trust in 1983 to house subsidiaries that are not part of traditional academic programs. It is an independent organization affiliated with the University but not governed by traditional academic procedures. This gives the University flexibility to get involved in innovative projects that go beyond strict research and education. The Trust subsidiaries are independent of each other and are encouraged to become economically self-supporting."

Samuel Schulhof, a former associate administrator for the EPA, was appointed Executive Vice President of the Trust and Associate Vice President of Applied Research at Pitt. It was Schulhof who recruited Berkey to U-PARC in 1985, when the gift of the Gulf Oil R&D Center was in the works. Once a senior research scientist and manager at Westinghouse Research, Berkey had spent the previous seven years heading his own environmental consulting firm.

"CHMR came about because Sam and I wanted a way to focus the resources of U-PARC on environmental issues, and particularly on regional needs," Berkey recounts. "It seemed to us that we in this region had an obligation to solve some of the pressing hazardous waste problems, many of which had come about because of our strong base in heavy manufacturing and agriculture over the past century.

"Pennsylvania is now ranked fourth in the nation in the production of hazardous waste, and second in the number of Superfund sites. And it's probably rated number one in its concern about radon. As an agricultural state it's a major user of pesticides. Sixty percent of our population depends on groundwater for their drinking supplies. Pollution in the Susquehanna River is a significant source of what flows into the Chesapeake Bay.

Dr. Edgar Berkey, President, Center for Hazardous Materials Research (CHMR).

"When we added all this together, it seemed to us that we in Pennsylvania should be at the center of providing solutions."

Funded by $35,000 in seed money from Dr. Posvar's office, CHMR set out to solve these problems in partnership with industry and government. "We convinced Dr. Posvar that the University would get the investment back several times over, and that we could establish a successful venture," says Berkey. "And that has happened, through fees to Pitt for the use of faculty and facilities, and through the growth of CHMR."

Starting from a base of zero in 1986, CHMR now has a staff of almost 30, drawn from the industrial, regulatory, and academic communities. CHMR will conduct about $2.5 million worth of projects in the current fiscal year which ends in

"Often what is considered hazardous waste by law is not considered hazardous waste by the people who run small companies."

mid-1989. This growth has been self-financed by project work and has been assisted by a number of grants from the Pennsylvania Department of Environmental Research and private companies.

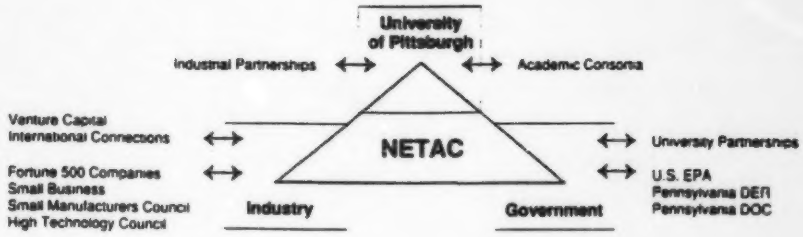
The Center's projects fall into four major categories: evaluating the health and environmental effects of toxic chemicals; researching better materials treatment, processing and disposal technologies; educating, training, and technical assistance about hazardous materials; and fostering international research and technology transfer.

As Dr. Berkey explains, a single philosophy guides all these activities. "We're independent, we're objective, we're neutral, we're third-party. We're not a captive of industry, government, or academia. Our reputation depends on our independence and our ethical standards. We have no vested interest in one technology or one method of remediation. We're a problem-solving staff with an applications orientation. The proof to us that this concept is sound is that it's working."

Can We Eat the Tomatoes?
An early opportunity to prove the concept came in 1987. Three months after a train derailment and subsequent chemical spill and fire forced the evacuation of 16,000 residents of Pittsburgh's Bloomfield neighborhood, State Representative Frank J. Pistella asked CHMR to answer citizens' questions about the possibly harmful long-term effects of the accident.

Trained workers excavate buried hazardous waste drums.

Photo courtesy CHMR



NETAC plans to bring Pittsburgh's corporate, academic and governmental forces together its efforts to commercialize environmental technology.

Having seen the smoke clouds rise from the burning cargo at the accident site, and hearing about the presence of phosphorous oxychloride, residents distrusted the official vague assurances that everything was all right. They didn't understand the technical language about what chemicals they might have been exposed to. And they wanted to know if their kids could play in Bloomfield backyards and whether or not it was safe to eat the tomatoes in the garden.

CHMR's report, presented in a public forum for the Bloomfield Citizen's Council, explained what happened during the incident and reassured residents that there were no long-term adverse effects for people or the environment. Berkey believes that CHMR's methodology was as important as its findings.

"We asked the citizens to express their concerns anyway they could," he explains. "We, in turn, translated those concerns into technical questions that we could study. Using the information obtained from interviews, videotapes, technical literature, site visits, experiments, and computer models, we answered their questions — publicly and openly. The citizens were extremely appreciative of the straightforward way we reported our findings."

What Happened to the Oil?

While the Bloomfield study was partially funded by an existing grant from the Pennsylvania Department of Environmental Resources — a grant which enables CHMR to provide technical assistance to communities affected by hazardous materials transportation accidents — funding for another major environmental impact study came from a private source: Ashland Oil, owner of the storage tank which spilled 700,000 gallons of oil into the Monongahela River on January 2, 1988. CHMR accepted a $250,000 no-strings grant from Ashland to study the environmental effects of the spill, on the condition that their findings would be publicly and periodically reported.

In making the grant, Ashland Oil President, Charles J. Luellen, stated, "It's important that the study be done by an independent third party whose objectivity and credibility are unquestioned by the public and private sectors. We feel that the University of Pittsburgh's Center for Hazardous Materials Research is such an

CHMR's report uncovered some surprising results. "Once we studied the event, we realized that by the time the oil spill passed Wheeling, the event was largely over," Dr. Berkey explains. "Seventy-five percent of the oil in the spill had settled out of the river by then. Most of the rest of the oil settled out over the next 50 miles. That technical data was available immediately following the spill, but no one was analyzing it.

"Meanwhile, communities downstream from Wheeling were closing their water systems, and people were becoming excited and concerned about public health issues. If we had been involved earlier and had the responsibility of analyzing the data, we could have tempered a lot of the news releases."

CHMR found that, although the spill killed a number of fish and waterfowl, the short-term environmental effects ranged from slight to moderate, and the potential for long-term effects was limited to only a few locations along the first 200 miles of the river system. Overall, the report concluded that there was little evidence in the river of significant, long-term harmful effects resulting from the spill.

Free, Frank, and Confidential Advice

While its environmental impact studies often demand a public forum, other CHMR activities call for an equal measure of confidentiality — particularly the business of helping small companies comply with OSHA, RCRA, SARA, and other state and federal environmental regulations.

Funded by an initial EPA grant and a continuing DER grant, CHMR operates a statewide technical assistance program that includes a confidential hotline, a half-day, on-site assessment visit, and a quarterly newsletter, *The Minimizer*, designed to serve Pennsylvania's small-quantity generators of hazardous waste.

The Hazardous Materials Hotline, 800-334-CHMR, logs about 200 confidential calls a month. ("Is this stuff hazardous? How should I get rid of it?" "I read about the new law that says I have to tell my employees about the chemicals we use. What do I have to do?") If a question is too complex to answer by telephone, CHMR may suggest a half-day site visit to the company.

Visitation reports are frank, free, and confidential. While no reports are submitted to regulatory groups, companies not in compliance are provided with a list of firms which can help them understand and meet regulatory requirements. "If the company wishes to continue working with CHMR, we have a fee schedule," Dr. Berkey says. "The companies are comfortable working with us in a traditional business relationship, and appreciate our nonregulatory position."

Berkey estimates that more than 50 percent of the small businesses covered by new hazardous waste laws are not complying with them all, mostly because they don't understand or know about them. "Since 1984 when the laws were introduced, the awareness level of the hazardous waste problem has increased. But with the laws changing, most companies need an update every year.

"Companies must ask themselves if they generate or use any material which is defined as a hazardous waste by Pennsylvania regulations, or if they have any processes that contaminate water, like dumping cleaning solvents down the drain," Berkey says. "Often, what is considered hazardous waste by law is not considered hazardous waste by the people who run small companies. Liquid paint that's left in a can is a good example. Technically, to throw that can in the trash is a violation of the law. We're offering companies that may be out of compliance the opportunity to come forward, to learn, and to manage these wastes in accordance with the regulations."

Not all the companies that request CHMR assistance are small. Westinghouse, USX, and Alcoa have also worked with CHMR. "They don't lack technical expertise, but they want an independent viewpoint," explains Berkey. "They ask us to make sense out of conflicting information or requests from the regulators, and to review the effectiveness of their own environmental programs. And they know that we won't go into a situation where we compromise our independent viewpoint. In fact, we've found that large companies prize our independence. So does the public."

Clearing Up Confusion

Making sense out of conflicting or confusing regulations is a specialty of CHMR. In fact, Dr. Berkey had gained valuable experience in this area before joining the organization. He served as a consultant to the EPA on developing more effective regulatory policies toward small businesses, and as editor of *Small Business Update*, a newsletter for top EPA management on environmental issues important to small businesses.

In 1987, CHMR released its first major publication for small businesses: a 250-page manual on hazardous waste reduction. With funding from the initial EPA grant, CHMR researched and developed the manual, focusing on eleven industry sectors in Pennsylvania — including vehicle maintenance, metal manufacturing and finishing, electrical plating, circuit board manufacturing, analytical and clinical labs, and pesticide applicators.

The first printing of 1,000 copies disappeared quickly as businesses realized that the well-organized manual offered practical, how-to advice. These same qualities won the manual the 1988 award for excellence in environmental education from the EPA's Region III Center for Environmental Learning. Now revising the manual in preparation for a second printing, CHMR has a backlog of requests from businesses throughout the United States, and even in other parts of the world.

TNO: The Dutch Connection

CHMR's wide-ranging recognition is largely the result of its deliberate strategy to join the international community of environmental scientists. In 1987, CHMR entered into a cooperative agreement with TNO, the Netherlands Organization for Applied Scientific Research, on a joint program to develop and apply innovative technologies to solve hazardous waste problems in the U.S. With 5,000 employees, TNO is one of the largest organizations in Europe for solving environmental problems.

According to Berkey, "The Netherlands must be prepared to cope with every environmental disaster scenario imaginable. The North Sea with its oil rigs forms one border. The Dutch are at the receiving end of the Rhine and Maas rivers, two of the most industrialized rivers in the world. They have a dense population in a heavily industrialized country, yet they are also heavily agricultural. Through their waterways pass all the hazardous materials of the world. And since they don't have wide-open areas for landfills and disposal sites, they have had to develop on-site solutions for handling hazardous wastes."

TNO has developed such on-site solutions, as well as sophisticated monitoring and modeling technologies. Data bases gathered over the last 15 years on industrial emissions in the Netherlands allow TNO to model the effects of controlling any single variable contributing to air pollution.

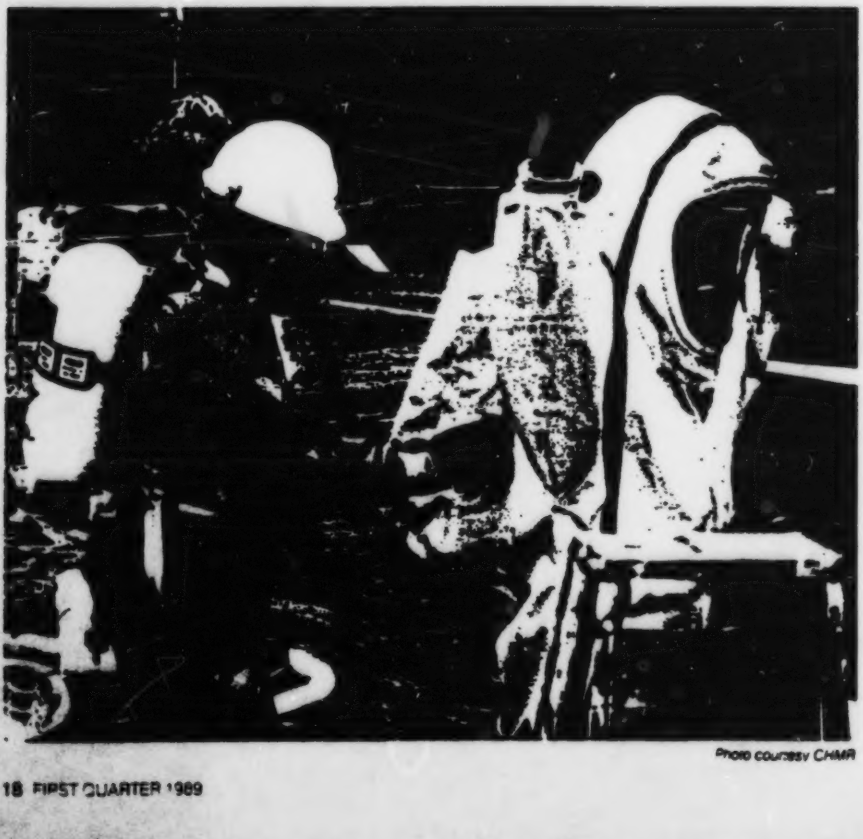
Because of its knowledge of oil spills in the North Sea and its work on the 1986 spill into the Rhine River, CHMR asked TNO to assist in studying the environmental effects of the Ashland oil spill. Using statistical data bases which at the time were unavailable to U.S. scientists, TNO could quickly evaluate the available data and come to a conclusion.

TNO is also working with CHMR to help create new markets outside of the Netherlands for its technologies. "We believe we can do that," says Berkey. "In fact, the partnership between TNO and CHMR is a perfect fit. TNO is like a large orchard, and the fruit of its research is ripening constantly on many different trees. They're very aware of the international potential of what they do. We've already worked with them on a German process for destroying asbestos that may have great applicability in this country.

"The connection has also allowed us to demonstrate to the EPA how you can move technology around the world if you have access to the commercial sector. That's one of the reasons the EPA founded NETAC here in Pittsburgh."

A Cinderella Emerging

A non-profit subsidiary of the University of Pittsburgh Trust, NETAC was established by the EPA as the result of an



At simulated hazardous waste sites, CHMR offers training in areas such as personnel decontamination.

Photo courtesy CHMR

A Capsule View of CHMR Projects

The Center for Hazardous Materials Research serves a wide spectrum of regional and national companies and governments, tackling problems associated with hazardous wastes and hazardous materials. Some examples:

- CHMR provides administrative services to the Commercial Hazardous Waste Management Evaluation Group, an association of 32 *Fortune* 500 firms which funds independent environmental audits and evaluations of commercial hazardous treatment, storage, and disposal facilities across the U.S.

- CHMR conducted a detailed review of the hazardous materials and waste management program for a major retail drug chain, and prepared hazardous materials/waste management and employee right-to-know compliance manuals.

- The Center's Health and Safety Training courses for hazardous waste cleanup meet the OSHA requirements for workers engaged in remedial activities at Superfund or other contaminated sites. Yearly, more than 400 people attend classes at the 2.5 acre simulated waste site at U-PARC.

- CHMR's Environmental Laboratory for Chemical Studies conducts studies to measure and determine the fate of pesticide chemicals in the environment.

- For Ambler Borough, a community north of Philadelphia, CHMR is assessing remediation plans for the cleanup of the "white mountain" — a million and a half cubic yards of asbestos waste, 65 feet high.

- The city of Sharon, Pennsylvania, has asked CHMR to evaluate possible wastes on a former industrial site so the land can be redeveloped.

- In Fairmont, West Virginia, CHMR has been assisting the city in evaluating plans for closing down an old coke oven works.

- Under an industry-funded grant, environmental data on several Pennsylvania Superfund sites at company-owned facilities were reviewed to develop recommendations for reducing the threat to public health and the environment. At one site, CHMR developed data which showed the site should not be placed on the National Priorities List.

- CHMR completed a bench-scale study of a patented chemical process for the destruction of hazardous organic chemicals. Its third-party feasibility tests confirmed the claims of the patent for the benefit of an investor group interested in funding further research, development, and commercialization of the process.

unsolicited proposal submitted by the Trust in January 1988. Over the next four years, NETAC will match the EPA's $4.5 million in funding through a combination of cash contributions, forgiveness of rent for NETAC facilities at U-PARC, in-kind services, direct industry support, and the sale of services. Mr. Schulhof is Acting President of NETAC, and Dr. Berkey chairs its national advisory committee.

NETAC's primary purpose is to create and demonstrate processes for identifying, developing, and bringing to market the most effective technologies for solving the highest priority environmental problems. Technologies developed anywhere in the world by individuals, small companies, corporations, and governments will be solicited and evaluated against a set of evaluation criteria. What happens next will depend on the needs of the developer and the promise of the technology.

As Dr. Berkey explains, "Once a technology meets the evaluation criteria, NETAC will work with the developers to assist in commercialization. If it's a small company that needs venture capital, we'll help them get it. Eventually, we'll establish some kind of investment vehicle of our own for that purpose. We might help an individual by doing a bench test, a feasibility study, or market and literature studies.

"We could also help a large company that doesn't need these things by doing an independent evaluation of their technology to verify their claims," Berkey says. "Or we could help by running field tests under our control so the results would be more credible. And we'll talk to regulators on behalf of the technology, as well. If regulations are unnecessarily inhibiting the application of a valuable process, we'll work to get them changed."

In short, NETAC seeks to create more direct, rapid channels for moving environmental technologies from concept to application.

"Environmental technologies have traditionally been perceived as high-risk investments," Berkey asserts. "The regulators keep changing the rules, so what was good yesterday isn't acceptable today. In general, regulatory people don't appreciate the commercialization process. They often prevent the kind of commercial testing that could lead to successful implementation. But since the EPA is a partner in NETAC, we'll be able to work with both the developers and the regulators to improve the commercialization process. Technologies that come through the NETAC process should have a much greater chance to attract capital, gain regulatory approval, and be accepted for public use."

In praising the establishment of NETAC in its lead editorial of December 6, 1988, the *Pittsburgh Post-Gazette* concluded: "It is not without ironic significance that a community that has long worked to shake off its 'smoky city' image should become the site of a center for the advancement of environmental technology. More than ever, Pittsburgh is a Cinderella emerging from the murk and cinders of the past."

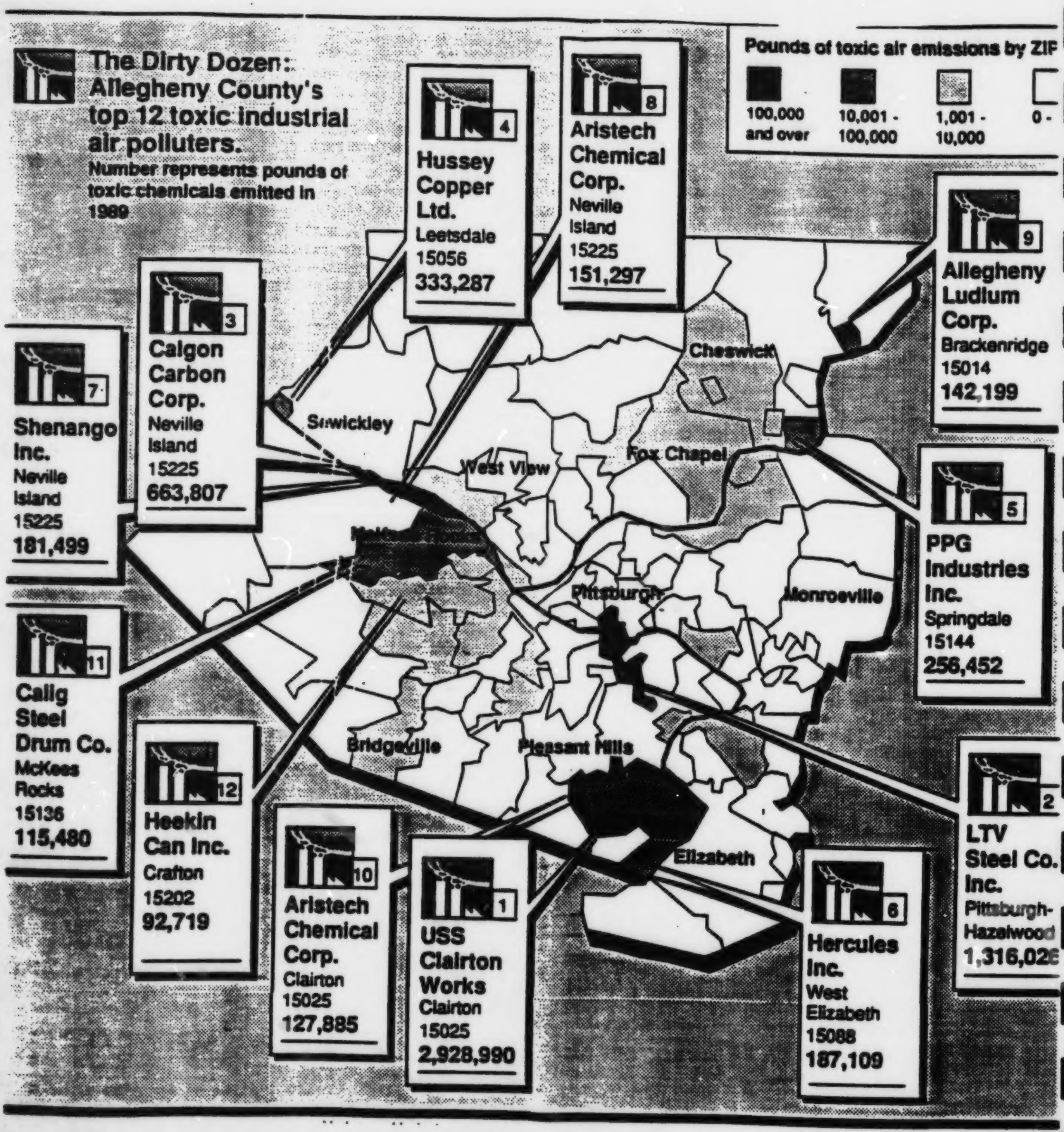
Indeed, as Berkey notes, the presence of CHMR and NETAC is creating potential business opportunities for Pittsburgh firms of all kinds. "There's a need not only for environmental technologies, but for related support technologies. We need better software to analyze and evaluate data. We need better instrumentation to monitor environmental processes. We need better legal support.

"The Pittsburgh business community can be strengthened through a better understanding of environmental issues. We intend to keep the high technology community aware of these issues through publications and conferences. Companies often have a very good understanding of their areas but don't understand the environmental area. That's where CHMR and NETAC can help."

■

The Dirty Dozen: Allegheny County's top 12 toxic industrial air polluters.

Number represents pounds of toxic chemicals emitted in 1989


Pounds of toxic air emissions by ZIP
100,000 and over
10,001 - 100,000
1,001 - 10,000
0 -
1 USS Clairton Works Clairton 15025 2,928,990
2 LTV Steel Co. Inc. Pittsburgh-Hazelwood 1,316,028
3 Calgon Carbon Corp. Neville Island 15225 663,807
4 Hussey Copper Ltd. Leetsdale 15056 333,287
5 PPG Industries Inc. Springdale 15144 256,452
6 Hercules Inc. West Elizabeth 15088 187,109
7 Shenango Inc. Neville Island 15225 181,499
8 Aristech Chemical Corp. Neville Island 15225 151,297
9 Allegheny Ludlum Corp. Brackenridge 15014 142,199
10 Aristech Chemical Corp. Clairton 15025 127,885
11 Cailg Steel Drum Co. McKees Rocks 15136 115,480
12 Heekin Can Inc. Crafton 15202 92,719
Sewickley
Cheswick
Fox Chapel
West View
Pittsburgh
Monroeville
Bridgeville
Pleasant Hills
Elizabeth

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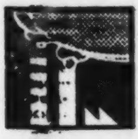


Most common toxic industrial chemicals in Allegheny County's air.

These chemicals are known to cause the listed health effects when people are exposed to high enough concentrations, or animal studies indicate they probably cause these effects in sufficient concentrations.

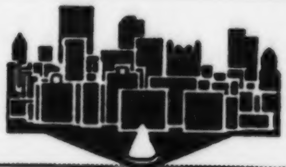
chemical	amount in pounds for 1989
Benzene Potent chemical known to cause leukemia; potentially causes birth defects and fatal anemia.	2,191,661
Ammonia Eye and respiratory irritation.	1,914,482
Xylene Birth defects; bone marrow and eye damage.	465,703
Toluene Birth defects; cell mutations; damage to bone marrow, liver and kidneys.	450,409
Copper Eye and respiratory irritation; flu-like illness; allergic skin rash.	305,002

Source: Enviromental Protection Agency

Post-Gazette

Industrial air

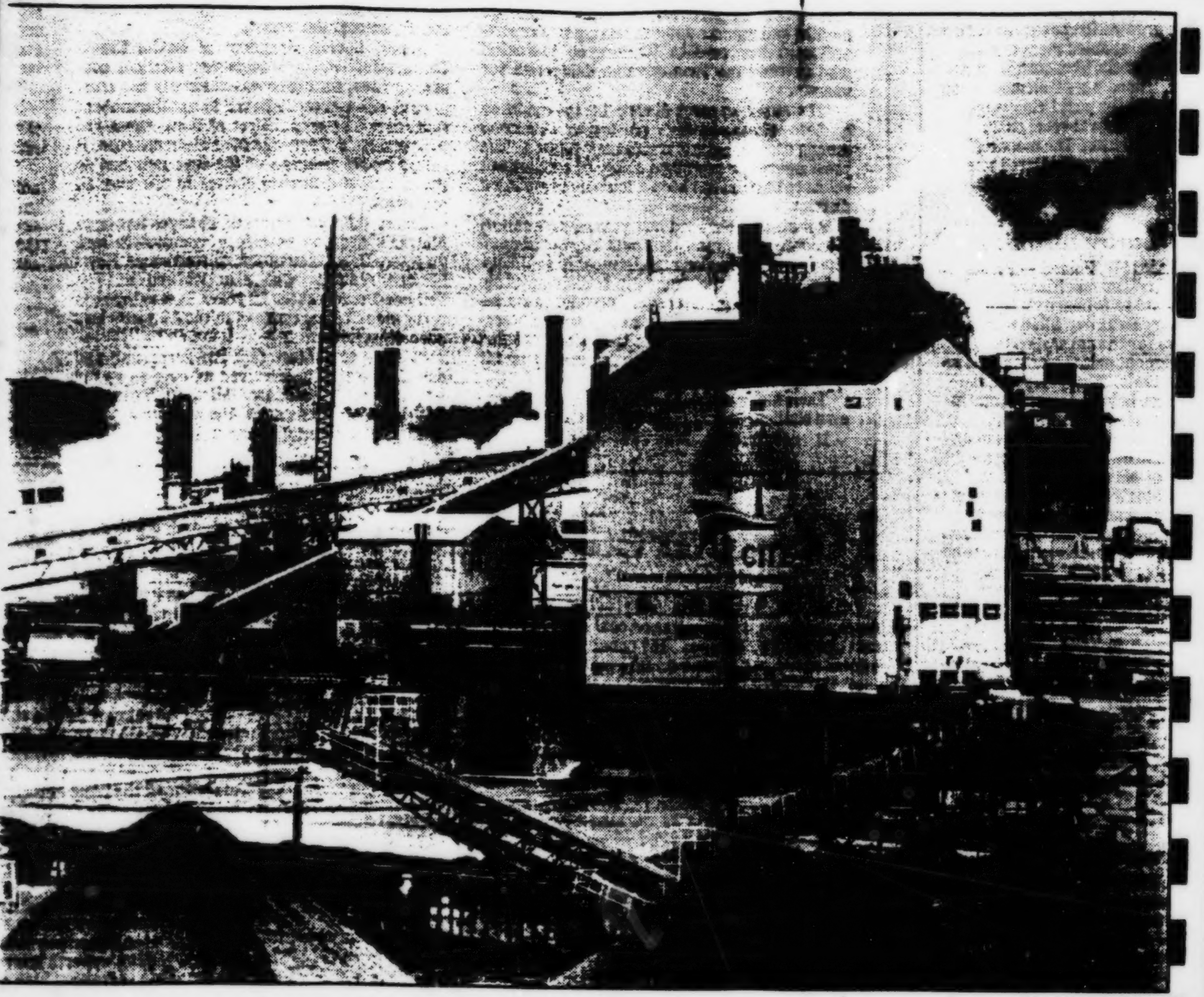
How Pittsburgh's industrial toxic air pollutants stack up against those in five metropolitan areas



City	Population	Total (in lbs.)	Known human carcinogens (in lbs.)
Minneapolis/St.Paul	1,487,700	14,090,104	71,830
Cleveland	1,430,800	11,122,635	310,208
Pittsburgh	1,354,300	10,166,852	2,451,254
Columbus	938,100	5,654,754	3,741
Cinncinnati	874,000	13,203,260	50,350
Baltimore	689,300	1,604,670	142,172

Population and emissions data are for the central county of each metropolitan area. Populations figures are U.S. Bureau of the Census estimates for 1988. Emissions figures are company estimates for 1988 submitted to the federal EPA

Millions of pounds of gas seep out of the doors and ports of the coke ovens



Bill Levis/Post-Gazett

Reductions in air pollution estimates at the USS Clairton Works are responsible for most of the reported drop of 3 million pounds in the county's overall toxic pollution.

County is U.S. leader in benzene pollution

By Sharon Voas
ost-Gazette Staff Writer

Beneath the sulfurous air of the coke works, nside the rows of narrow coke ovens stacked ike Goliath-sized iron books, is hell in a box.

Temperatures hover around 2,200 degrees in he ovens — so hot that the walls and coal glow ed-orange.

The intense heat drives a brew of toxic hemicals out of the coal. The greatest of these n volume is benzene. Millions of pounds of the gas seep out of the doors and ports of the coke ovens in Allegheny County's three coke works and trickle from the nearby plants that turn coke oven gas into cash.

INSIGHT

An invisible and deceptively pleasant-smelling poison, benzene last year comprised one-third of the 7 million pounds of toxic chemicals that Allegheny County industries estimated they emitted into the air.

Benzene has been proved to cause leukemia, and studies indicate that it probably causes birth defects. Yet no one knows whether county residents are exposed to sufficient amounts of it or other industrial toxins to harm their health.

In the few areas of the county where the concentration of benzene in the air is known, U.S. Environmental Protection Agency experts suggest that the risk to residents of developing leukemia might be heightened. But the county's toxicology consultant maintains that the concentrations are well within safe levels.

Nevertheless, enough benzene wafts from the coke works that Allegheny County has far more pounds of airborne industrial pollutants known to cause cancer than do five other metropolitan areas of similar size.

In the central counties of the Cleveland, Cincinnati, Columbus, Baltimore and Minneapolis-St. Paul metropolitan areas, industria

SEE SMOKE, PAGE

County leads U.S. in toxic benzene

SMOKE FROM PAGE 1

emissions of proven carcinogens ranged from 3,800 to 310,000 pounds in 1988, the latest year for which national figures are available on the U.S. Environmental Protection Agency's computer network.

Allegheny County had 2.5 million pounds.

Benzene dominates

All of that was benzene — except for 750 pounds of chromium. Almost all of it came from the coke works.

Though reported emissions of all types of toxic chemicals in the county plummeted last year, benzene represented only a small part of that reduction.

"If there's no air-toxics problem here, there's no toxics problem anywhere in the country," said David Jasnow, a physicist who is an alternate member of the county air pollution advisory committee and a board member of the local Group Against Smog and Pollution.

Though the health effects of this type of air pollution are still unclear, the public concern that has arisen since the government started requiring companies to report their toxic emissions three years ago has spurred Congress to consider new laws and the EPA to develop regulations that will reduce toxic emissions substantially in the future.

The total amount of industrial toxic air pollutants in the county appeared to plummet from 10 million pounds in 1988 to 7 million pounds last year, according to estimates that industries must file annually with the state and the EPA under the Superfund Amendment and Reauthorization Act. Some of the drop was attributed to changes in calculations and some to actual decreases in emissions.

The estimates cover more than 300 chemicals that are proven or suspected of causing cancer, birth defects, organ damage and eye and respiratory ailments when people are exposed to sufficient concentrations of them.

Benzene emissions dropped only a third as much as did total toxic emissions. Benzene emissions totaled 2.1 million pounds in 1989, a drop of 260,000 pounds, or 11 percent, from 1988 levels.

"That quantity of benzene would be a basis for concern," said James Weigold, EPA deputy director of the Emissions Standards Division. "Coke ovens are clearly one of our greatest priorities for regulation. They have very disturbing emissions."

Clairton reductions

Reductions in air pollution estimates at the USS Clairton Works were responsible for most of the reported drop of 3 million pounds in the county's overall toxic pollution. The steel company, which produced the largest volume of toxic air pollutants in the county last year and more than half the benzene, estimated that its emissions shrank by 2.5 million pounds.

> *"It's a good-news story. Things are improving rapidly, and they will improve further."*
>
> **— Philip Masciantonio, USX's vice president of environmental affairs**

Ammonia emissions were cut by more than half, accounting for more than 1.3 million pounds of the total.

Another 1.1 million pounds was eliminated by halving toluene releases and reducing phenol and naphthalene releases by almost 90 percent.

The Clairton Works' benzene emissions did not show as much of a drop, falling only from 1.4 million to 1.2 million pounds.

About half of the plant's cuts in overall toxic emissions was due to the company's overestimating its emissions in 1988, said Philip Masciantonio, USX's vice president of environmental affairs. Half was actual reductions in emissions, he said, created by an environmental training program for workers and the installation of pollution control equipment.

"It's a good-news story," Mascjantonio said. "Things are improving rapidly, and they will improve further."

The county neighborhoods with the greatest toxic pollution are all home to coke works. The Clairton Works, the nation's largest coke plant, and the adjoining Aristech coke oven gas byproducts plant made Clairton the area with the highest volume of known carcinogens and the largest volume of air toxics overall.

Hazelwood, site of the LTV Steel Co. coke works, was the second most toxic neighborhood. Neville Island, location of the Shenango Inc. coke works, took third place.

Whether those toxins saturate the air in sufficient concentrations to pose a health risk is unknown. Generally, concentrations are highest near the plants and drop off dramatically farther away.

Statistical uncertainty

To calculate the risk to an individual, the EPA's Weigold said, scientists would have to know how much of a pollutant was present at a particular spot and how long a person was exposed to it. There are no air pollution monitors in the county for most toxic substances.

But the Allegheny County Health Department does maintain benzene monitors downwind from each of the coke works.

A monitor that sits outside South Allegheny High School, about two miles downwind from the Clairton Works and Aristech byproducts plant, measured benzene levels last year that would raise the odds of developing leukemia from the normal incidence of 1 in 10,500 to 1 in 3,400 for a person who breathed it all his life, according to EPA estimates.

Some of the benzene detected by the monitor undoubtedly came from car exhaust, a major source of benzene in urban areas. Some came from the 1.3 million pounds of benzene the Clairton Works and Aristech exhaled last year.

The risk numbers are squishy, cautioned Michael Dusetzina, who conducts risk assessments for the EPA's air quality section, because of scientific uncertainties inherent in such calculations.

Under a benzene standard recommended two years ago by the consulting toxicologist for the county Health Department, the concentrations at the high school would be safe.

Yves Alarie, chairman of the University of Pittsburgh's industrial environmental health department, suggested that a safe average annual benzene concentration would be 20 parts per billion — more than twice the 8.7 parts per billion measured at the high school last year. He said he based his recommendation on an

SEE **TOXIC,** PAGE 7

Clean air measures promised

TOXIC FROM PAGE 6

extensive review of scientific studies on benzene.

Relief from air toxics is on the horizon. The new Clean Air Act pending in Congress is expected to slash industrial toxic air pollution by about 70 percent. But the reductions will not take effect for seven to 13 years for most industries, and some reductions at coke works could stretch until the year 2020.

Relief from benzene emissions will be more immediate. Concerned by the hazards of benzene, the EPA, in one of the most sweeping toxic pollution regulations ever promulgated, ordered industries last September to slash benzene emissions by more than 90 percent by September 1991. Installation of benzene control equipment is expected to cost each of the companies tens of millions of dollars.

As the three coke works begin installing the benzene controls over the next year, less and less benzene should escape from the coke infernos into Allegheny County's air.

James O'Toole and Mai Maki of the Post-Gazette and Gary Schaeffer of the Block News Alliance contributed to this report.

Pittsburgh Post-Gazette: Monday, August 27, 1990

THE TOXIC BREW

"It burns when you breathe. You just sort of half hold your breath. You don't **breathe** *breathe."*

Plant's neighbors fatalistic about air

By Sharon Voas
Post-Gazette Staff Writer

On a sign stretching down the side of a building at the Clairton Coke Works, a bird-flecked blue sky encircles a lush green pine and a pure white silhouette of the plant. The sky swirls into a blue stream at the bottom.

"USS Clairton Works," the sign says. "Continuous Improvement to Environment."

Wafting above the sign is smoke from a chimney atop the building. Below the sign, three streams of waste water surge into the murky, coal-lined Monongahela River.

Though both the company and county health officials report that emissions from the plant have improved, this remains the neighborhood with the most polluted air in Allegheny County.

Nearly half of the industrial toxic air pollutants in the county last year — 3 million pounds — and more than half of the known carcinogens — 1.3 million pounds — were emitted by the Clairton Works and the nearby Aristech coke oven gas byproducts plant.

The neighborhoods with the next greatest amounts of toxic air pollution in the county are those near the LTV Steel Co. coke works in Hazelwood and the Shenango Inc. coke works on Neville Island.

Spokesmen for all three coke works said their companies were designing or installing controls that would slash emissions of benzene — the most common coke oven toxin — by 90 percent by September 1991, to meet new U.S. Environmental Protection Agency benzene regulations. The controls that will shrink benzene emissions also will significantly reduce the emissions of several other toxins.

Alberta Gumbert, 69, who lives in Glassport across the Monongahela River from the sign on the Clairton Works, said, "I wouldn't advise anyone to settle here.

"It burns when you breathe. You just sort of half hold your breath. You don't *breathe* breathe."

Across the river from her, white plumes waft from the "the mill," as it is known. From the coke works, a road rises sharply past a brick housing project where people congregate on the steps at midday, and continues past small clapboard and brick homes with pink petunias set in white-painted auto tires.

The prevailing winds carry pollutants a few blocks from the coke works up to a modest white house on Crest Street with silver spray-painted lions at the gate. Clydie Scott has lived here with her husband, Randolph, for 20 years. The pollution makes Clydie, a warm woman of 55, angry and afraid.

When the wind brings the strongest fumes from the plant, "I can't go outside because I have a breathing disorder," Clydie, a smoker, says with a raspiness and slightly labored breathing.

"Sometimes, I get to the place I can't hardly breathe. I get all dizzy and I look out and I see white clouds coming out [of the coke works]."

Randolph, 67, a bull of a man whose body shows the bulk of hauling cement for 43 years, is philosophical about it.

"Everybody cries about pollution, but everyone wants a job," he said. "There's nothing you can make that doesn't release something."

"I think there's some kind of way a stop should be put to it," Clydie said. "There'll be more deaths, more sick people, more cancer. But what can you do? What is it going to take to put a stop to all this?"

Philip Masciantonio, vice president of environmental affairs for USX, which owns the Clairton Works, said: "We're out to reduce every pound of pollution we can reduce, if we don't adversely affect the economic competitiveness of the plant."

Not only were the emissions figures from the plant slashed almost in half last year, he said, but they will continue to improve.

About half of that reduction was because the company overestimated the amount of pollution in emitted in earlier years, said Michael Hanson, manager of environmental controls at the Clairton Works.

In 1989, the company based many more of its emissions figures on actual tests than on estimates. And a consulting firm hired by the steel company developed a mathematical formula for calculating the estimated total that is more accurate than the EPA-recommended formula that the company used in the past, Hanson said.

But the company also installed new pollution control equipment last year and put every employee, from managers on down, through an environmental training program that reduced pollution significantly, Masciantonio said. The plant also suffered fewer accidents, so the venting of raw coke oven gases directly into the air dropped from eight hours' worth in 1988 to one hour in 1989.

County Health Department pollution monitors and inspections indicate that pollution from the Clairton Works indeed dropped last year.

"There's been a significant improvement out there," said Roger Westman, chief of planning and engineering for the county Bureau of Air Pollution Control. "We're showing, generally, about 50 percent fewer violations from 1988 to 1989."

The violations consisted of such things as coke-oven door leaks and overly long releases of pollutants while coke was being emptied from the ovens.

The neighborhood with the second-largest portion of toxic air pollutants — 1.3 million pounds — and of known carcinogens — 834,000 pounds — is Hazelwood, home to the flares and smoke plumes of the LTV Steel Co. coke works.

Accidents the rule at research facility

Gerald Elson photo

By KAREN POPP

There are many accidents at the Center for Hazardous Materials Research (CHMR) — but luckily they are all simulated.

CHMR was formed in 1985 as a not-for-profit subsidiary of the University of Pittsburgh Trust to assist in addressing and solving the broad range of problems associated with the use and disposal of hazardous materials and waste.

The company, which employs between 50 and 60 people, is located at the 85-acre University of Pittsburgh Applied Research Center in Harmarville, and is composed of four distinct facets: technical assistance to government and industry; environmental education and training; environmental laboratory for chemical studies; and international technological transfer and applied research with France, the Netherlands, the Soviet Union and West Germany.

Richard A. DeBlasio, training specialist, said emergency response training is the "big meat of the program."

The onset of Occupational Safety and Health Administration training requirements has led more companies to seek out competent programs to educate its workers. More than 2,000 people have been trained by CHMR.

The company conducts intensive training, offering 14 courses in the following four categories: hazardous waste operation, hazardous materials emergency response, occupational health and safety and

Please turn to page 9

CHMR simulations focus on emergency response

Continued from page 1

environmental compliance.

Training takes place in the classroom and on CHMR's 10-acre training and simulation site outfitted for tanker and plant emergencies.

"The training site sets us apart. It is different from a program conducted out of a classroom or motel," DeBlasio said of the site.

Emergency simulations include tanker truck rollovers, chemical spills, abandoned waste site, decontamination processes and full chemical plant operations.

DeBlasio said in addition to providing training for these types of emergencies, CHMR is preparing to simulate railroad car derailments as part of the training.

"The tracks should be completed any day now. The cars are waiting to be put on the tracks," DeBlasio said.

"We try to make the simulations as real as possible," he said. But, in the interest of safety, hazardous chemicals are replaced in the simulation by such things as colored water and syrup.

The simulations are videotaped and reviewed by CHMR training personnel and those participating in the exercises.

Courses, ranging in price from $175 to $675 depending upon the hours involved, can be conducted at CHMR's training facilities or at the company's location. Average class size is 30.

The 40-hour course in hazardous waste cleanup operations meets the OSHA health and safety initial training requirements for workers engaged in remedial activities at hazardous waste sites.

The courses are customized to fit the need of the particular company. William Burket, a certified hazardous materials instructor, is the head of CHMR's training staff.

"We emphasize education first and satisfying the regulations second. But our programs are above the federal requirements," said DeBlasio.

Steven T. Ostheim, director of business development, said the impetus for some of the course work stems from the toll-free hazardous materials hotline that provides confidential, non-regulatory answers to technical and compliance questions. The hotline falls under the technical assistance program.

Ostheim said CHMR has received a two-year, $300,000 grant from the U.S. Environmental Protection Agency to expand the technical assistance program.

Ostheim said a peak in the number of calls to the hotline comes following the publication of the quarterly newsletter, *The Minimizer*.

"As the need arises, we design a specific course," he said.

Ostheim said workers must be trained at a higher level today due to the increased complexity of hazardous chemicals. "Volunteer firemen have an increased level of responsibility for hazardous materials incidents. Training on environmental chemical incidents is crucial," he said.

"The regulations are constantly changing. Businesses need to keep updated on the regulations that may affect them. We do not like to see anyone get the stiff penalties the government gives out today," DeBlasio said.

One local company which has sent employees for training at CHMR is REMCOR Inc., a hazardous waste remediation firm located in the RIDC Park in O'Hara Township. The firm employs between 150 and 175.

Jacqueline Schlesinger, a technical writer for the company who took the 40-hour OSHA training course last winter, said she gained "a better understanding and perspective of the environmental community."

Schlesinger said the course material was covered well and the simulations were "excellent."

"Everyone worked together and functioned as a team (during the simulations)," she said.

Audrey Zelanko, a project scientist for REMCOR who also took the 40-hour course, said she benefited from training.

"They did a good job of covering the academic aspects and doing the hands-on equipment demonstrations and participation," she said.

Ostheim said CHMR's Pennsylvania location is especially advantageous because the state has the dubious distinction of being the number one state in the country for transportation accidents involving hazardous chemicals.

The director said this is due to the fact that Pennsylvania is in the industrial belt with a lot of traffic going through it.

In addition, Pennsylvania is the number two state in superfund sites and the fourth highest state in terms of hazardous waste generated.

"If you draw a circle within a 600-mile radius of Pittsburgh, you capture all the hazardous waste generated," Ostheim said. "The problems are here. It is important that the solutions be here as well."

One of the problems that CHMR got involved with was the Bloomfield train derailment. CHMR, at the request of State Rep. Frank J. Pistella, D-Bloomfield, provided the public with answers to questions about the materials that were released, the concentration levels of hazardous substances to which they might have been exposed and the possibility of short and long-term health and environmental effects resulting from exposure to the hazardous materials.

"One of the things they wanted to know was if they could eat their (homegrown) tomatoes," Ostheim said.

In the near future, CHMR will conduct two seminars to assist businesses in complying with federal and state environmental and health and safety regulations.

DeBlasio said in the more distant future, CHMR plans to provide specialized courses in confined space entry, which is entering an area not made for easy human access; fork truck safety and a specialized respirator course.

Oil-hungry microbes face first big test at Alaska oil spill

By Byron Spice
Science Editor, Post-Gazette

Oil-gobbling microbes will take to the beach on Alaska's Knight Island this week in a test to show whether the tiny bugs can clean shorelines after oil spills better than can legions of towel-wielding people.

Only a 300-yard stretch of beach on the Prince William Sound island will be used in the field test, but Environmental Protection Agency officials say the results could help guide future efforts to clean beaches soiled when 11 million gallons of heavy crude spilled from the Exxon Valdez last year.

The idea of relying on naturally occurring bacteria in the soil to digest oil or other pollutants, transforming them to more benign substances, is nothing new. Known as bioremediation, this technique has been used to clean up hazardous waste sites and to treat sewage and waste water.

But during high-profile disasters, such as the Valdez spill, people directing the cleanup efforts have been hesitant to make use of bioremediation, said Larry McGeehan, vice president of the National Environmental Technology Applications Corp. at the University of Pittsburgh.

Microbes do their work slowly and imperceptibly, he explained, while the public seeks immediate results. "It's much better for the TV camera ... to have people dressed in yellow out there wiping rocks," he said.

Speeding the commercial adoption of innovative technologies such as bioremediation is the primary purpose of the National Environmental Technology Applications Corp., which was formed two years ago by EPA and the University of Pittsburgh Trust.

This summer's field test should encourage increased use of microbes by providing the first scientific comparison of the effectiveness of various bioremediation strategies, McGeehan said.

During the six-week test, the beach will be divided into four plots. Nothing will be done to the first plot, allowing natural processes to work. Fertilizer, similar to common lawn fertilizer, will be applied to the second plot to augment the growth of oil-eating bacteria already in the soil. The final two plots will be seeded with commercially available mixtures of oil-eating microbes and fertilizer that were recommended for the test by the Pittsburgh group.

"Tests of this type have not been performed before," said Steve Lingel, deputy director of EPA's Office of Environmental Engineering. As a result, officials have lacked the information they need to choose the best bioremediation technique for each clean up.

The microbes themselves are by no means exotic, McGeehan said. "If you'd stick your hands in the ground around any gas station, you'd get millions of them in your hands," he added.

Last year, Exxon tested bioremediation techniques by spraying 70 miles of oil-contaminated Alaskan beaches with fertilizers that encourage microbe growth, McGeehan said. Oil is no longer visible on the surfaces of those beaches, he added, but scientists are still arguing how much cleaning can be attributed to natural processes and how much to the fertilizer treatment.

The field testing slated to begin this week will be more carefully controlled, said McGeehan, who was in Alaska last week to assist with final site selection and other test preparation. It also will go further by testing whether the addition of microbes to those already in the soil increases the cleanup effectiveness.

In addition to noting changes in oil contamination on the beach surface, the researchers seek to determine how far the microbes penetrate into the soil. In some areas, McGeehan noted, oil has seeped to a depth of three feet.

Each of the test plots thus will include three baskets, each about the size of a golfball basket, that are filled with equal amounts of oily gravel and sunk into the soil. The baskets will be sampled to determine how deeply the bacteria penetrate.

Testing will begin this week, depending on the outcome of toxicity testing that was being performed last week to determine how much fertilizer the beach could tolerate and on the approval of the Alaska Department of Environmental Protection.

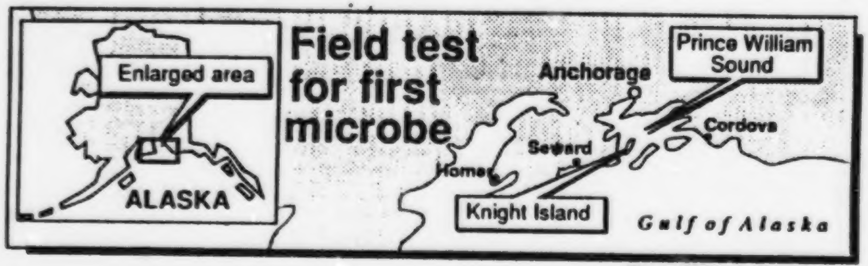
The criteria used to select the bioremediation products to be tested and the testing process itself will be useful in evaluating other products and in matching products to a particular application, EPA's Lingel said.

The two microbe/fertilizer products being tested were selected in part on the basis of tests at EPA's Risk Reduction Laboratory in Cincinnati, Ohio. Ten different products were tested by the lab to determine their effectiveness in degrading weathered Prudhoe Bay crude oil in sea water from Prince William Sound.

Though two products — those sold by Sybron Chemicals Inc., of Salem, Va., and Environmental Remediation Inc., of Baton Rouge, La., — outperformed the others, "we frankly don't know if the results would be the same if you had a different type of oil in a different location," Lingel said.

The Knight Island field test, if successful, thus will be only the first step in developing the information necessary for matching bioremediation products to particular applications, he said.

EPA hopes the vendors themselves will use the field test as a model for their own tests and thus be able to provide customers with information that allows for reliable comparison of different products. "I think we're breaking new ground here," he added.



Daniel Marsula/Post-Gazette

PITTSBURGH POST GAZETTE

More delays on Neville Island bridge

Hazardous waste site worries PennDOT, federal highway agency

By Mark Belko
Post-Gazette Staff Writer

Allegheny County is facing additional delays in the construction of a new Coraopolis-Neville Island bridge because two funding agencies have asked it to consider other paths for the span.

The Pennsylvania Department of Transportation and the Federal Highway Administration are asking for the additional review because the path being proposed by the county on the Neville Island side will border a 60-acre Ohio River Park hazardous waste site targeted for Superfund clean-up by the federal Environmental Protection Agency.

The request will delay the project at least another three to six months and possibly longer, said Herbert C. Higginbotham II, county director of engineering and construction.

"We're talking three to six months under the most optimistic scenario. Beyond that, I don't want to speculate," he said.

Higginbotham said the county would begin federal and state regulations and we're going to do what they tell us to do."
reviewing alternatives today in an effort to get the task done as quickly as possible.

"We're not the masters of our own fate anymore," added a disappointed Commissioner Tom Foerster. "We're the servants of

Although extensive county testing has found no contamination in the proposed bridge right-of-way, PennDOT and the federal authorities fear they could be held liable for costly clean-up responsibilities should problems arise.

"It's a worst-case scenario ... it's enough of a red flag that we want to proceed with caution," said Dan Johnson, Federal Highway Administration environmental specialist.

Although the county has offered to accept full responsibility for any cleanup responsibilities, this may not be enough to preclude action against PennDOT or the federal highway agency, said Wayne Kober, chief of PennDOT's environmental quality division.

"If the county runs out of money [for the clean-up] it would automatically start involving PennDOT and the FHWA," he said.

The bridge, which spans the Ohio River and links Neville Island and Coraopolis, originally was scheduled to be completed in late 1992. This was then pushed back to mid-1993 because of the EPA's refusal to absolve the agencies from liability for the cost of cleanup.

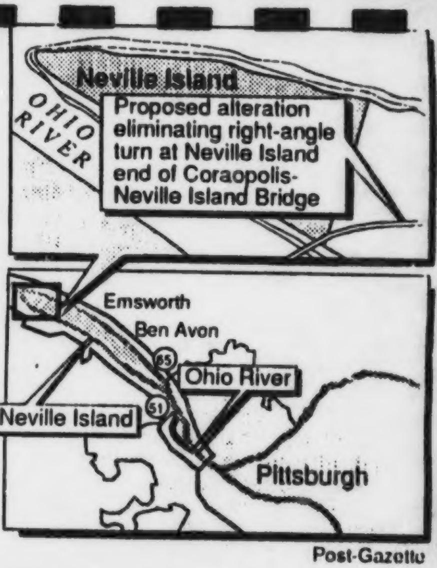
Alternative rights of way in other areas of the island would increase construction costs — now estimated at $13 million — by 50 percent because the bridge would have to span wider parts of the Ohio River, Higginbotham said.

But Johnson cautioned against "false economies," saying it might be wiser to spend an extra $4 million now on a bigger bridge than $10 million later on should problems develop near the waste site.

Should the newest study find that the alternatives aren't feasible, PennDOT and the highway administration will throw their support behind the proposed county alignment, Johnson and Kober said.

"We'd like to be in the position to say we entered into a project knowing that we took some time, considered all the risks and made an informed decision," Johnson said.

The existing Coraopolis-Neville Island bridge has been closed the past two winters because the steel is brittle, which, when combined with low temperatures, could cause collapse. The bridge reopens in the spring and summer.


Neville Island
Proposed alteration eliminating right-angle turn at Neville Island end of Coraopolis-Neville Island Bridge
OHIO RIVER
Emsworth
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Ohio River
Neville Island
Pittsburgh

Post-Gazette

Toxic wastes on Neville Island found to have poisoned water, soil

By Sharon Voas
Post-Gazette Staff Writer

Toxic wastes buried in Ohio River Park on Neville Island have saturated the ground water and soil and could pose a health hazard, a state Health Department study says.

Department investigators found that the soil and groundwater at "Poison Park," as it is nicknamed, were polluted with high concentrations of pesticides, benzene, toluene and other industrial wastes that are known or suspected carcinogens and that can cause organ damage.

Drinking water for 40,000 people in Coraopolis, Moon and Sewickley is drawn from wells within three miles of the park, which was designated a federal Superfund cleanup site last week. But the industrial wastes dumped on the northwest tip of the island from 1935 to the early 1950s have not contaminated those drinking water supplies, said Gerry Barron, Allegheny County's deputy director of environmental health.

The greatest concern is that heavy storms, floods or severe erosion could flush dangerous levels of toxins out of the soil and into drinking water supplies, said Robert Stroman, of the state Health Department's health assessment section. That also could cause toxins to concentrate in fish in the Ohio River.

"The site is not a serious health concern at the present time," said Kandiah Sivarajah, a state Health Department toxicologist. "But there's real concern regarding what we found on the site."

Repeated exposure to the pollutants over several years could pose hazards to workers and trespassers, Stroman said.

The park is ringed by a nine-foot-high fence posted with warning signs. But trespassers cut through the fence several times a year, and fishermen and hikers frequent the park, which appears pastoral despite the pollution beneath the soil. The nearest home is only 50 feet from the site.

The Hillman Co., which owns the 35-acre site and had donated it to the county for a park before the toxic wastes were found, agreed this week to start formal discussions with the federal Environmental Protection Agency on how the company is to clean up the site.

Martin Kotsch, the EPA's manager for the project, said he was optimistic that the negotiations could be completed by the end of the year. Studies of the nature and extent of the pollution and methods of cleaning it up could start next spring and take 18 months, he said. How long it will take to clean up the wastes cannot be determined until those studies have been done.

PITTSBURGH POST_GAZETTE 9/7/90

Workers prompt mass recycling

Continued from page 4s

as North Hills Passavant Hospital, bu their tracking and documenting procedures are superior to none. And reporting and accurate documentation are needed to have a successful program."

"They have complied with Act 101 (which mandates recycling by Sept. 26, 1990, in towns with populations of 10,000 or more) before the law even passed," he added.

Tarentino said 27 states have recycling laws on the books.

Reilly said employees became so enthusiastic about recycling that they formed an activities committee and suggested the proceeds from aluminum can recycling be utilized for employee activities such as baseball games and trips to Kennywood.

The next categories the hospital plans to integrate into its recycling program are styrofoam cups, dishes and food.

"Over 4,000 meals per day are served. The food could be composted or given to food banks. We could impact another 25 percent," he said.

For his efforts in the hospital's recycling program, Reilly recently received an environmental award from the Hospital Council of Western Pennsylvania.

Reilly said his goal is to reduce the waste stream by 50 percent to 60 percent through recycling and waste incineration.

To those who have not begun recycling Reilly advises, "Do not panic. It is not that big of a deal. It takes a while to get used to. But people in your organization want to do their part."

"Other hospitals will be there (in recycling). It is not a competitive situation. It's a win/win situation for everyone," he said.

"If you're not buying recycled products, you're not recycling," Tarentino said.

Hospital wastes no time getting recycling started

By KAREN POPP

Health Care

The foremost mission of a hospital is to provide the best possible care for its patients. In addition to that consideration, employees of North Hills Passavant Hospital wanted to help preserve the environment and instituted a massive recycling program to illustrate their concern.

North Hills Passavant Hospital, the largest employer in the North Hills with more than 1,200 employees, began recycling in 1987.

The hospital recycles a wide variety of natural, metal and miscellaneous items, including aluminum cans, corrugated cardboard, high-grade office paper, mercury batteries, silver from x-ray film and scrap metal. Routine hospital procedures separate any infectious waste from recyclables. A recent waste audit showed that recycling has reduced the hospital's solid waste stream by approximately 35 percent.

Kevin R. Reilly, the hospital's director of biomedical engineering, hazardous waste management/right to know coordinator and safety director, said the impetus for the recycling program originated in 1984 with the formation of the hazardous waste management committee.

"It was a natural outgrowth of the hazardous waste management committee. We saw there were environmental issues down the pike that needed to be looked at including the laws and regulations ," Reilly said.

Reilly said several people in the hospital approached him in 1987 about initiating a recycling program. He said he thought it was a good idea and decided to go ahead with it.

"We pulled it all together to form a unified program," he said.

Over 100 people are actively involved in the recycling process, with approximately 95 percent of hospital personnel participating.

"The voluntary effort of the employee makes it work. We have hired no one fo this program. A lot of people go out o their way to do extra for the program," Reilly said.

Reilly said the hospital spent approximately $12,000 to purchase items such a a bailer and trash cans and saves approximately $10,000 to $11,000 per year wit the payback from recyclables and the reduction in the amount of waste in th dumpster.

Not only does the hospital recycle man items, it also uses flow charts to recor and track the recyclables.

"Last year, we made a $6 return on (mercury batteries) which paid for th shipping and 10 tons of tin cans are take from the dietary department in one yea Also, we have resold or reused tons medical equipment that did not go to th landfill," Reilly said.

Paper and cardboard are transported American Recycling, while aluminum, b metal and tin cans are taken to Tri Coun Recycling.

Reilly said the hospital's solid wast stream is reduced between 25 percent 40 percent through recycling and incineration.

But Reilly emphasized the program not geared toward making money.

The hospital's recycling program ha been praised outside of its walls.

Vince Tarentino, market developme coordinator for the Bureau of Waste Management Division of Waste Minimizatio and Planning at the state Department Environmental Resources, said, "Man hospitals may be recycling as many item

Continued on page 13s

PITTSBURGH BUSINESS TIMES

** The Charleston Gazette, Friday, August 17, 1990

Commission buries plan for landfill

By Michael Jones
STAFF WRITER

Don's Disposal's proposed landfill got an expected drubbing by the Kanawha County Commission Thursday, a move that could kill the proposal or send it into the courts.

Playing to a packed house of protesters and politicians, commissioners voted unanimously against the landfill proposal for Second Creek near Sissonville.

"It was a political decision," said Don's Disposal attorney John Curry. "Now we're going to have to see their rationale."

Commissioners said they will prepare a specific order on the landfill proposal next week.

The list of people signed up to speak on the issue could be viewed as prophetic. Of about 50, one was for it. Overall crowd estimates were about 300, including some children.

But only a few people had spoken when Commissioner Bill Reese moved to reject the application. Reese has been an outspoken opponent of out-of-state trash, which was Thursday's theme of opposition.

"The reason it's so emotional is that so many citizens are against out-of-state garbage," speaker Ruth Goldsmith of South Charleston told commissioners. "We don't need to subject ourselves to the indignity of out-of-state garbage."

The lone landfill supporter listed as a speaker was former state Public Service Commissioner Charlotte Lane of Charleston.

"Landfills aren't popular, but they're a fact of life," Lane said. "The issue must be addressed in a responsible fashion. We need to look at the long term and not the short-term popular thing to do."

Although state law lists specific deficiencies county commissions may rule on, the commissioners Thursday seemed to be rejecting the entire proposal. The county planning office had recommended rejection of the proposal early in the discussion.

Don's Disposal had sought a landfill that would take in more than 10,000 tons a month. The county Solid Waste Authority, which is an appointed body, previously had approved unanimously the firm's site application.

(Please turn to Page 10A, col. 3)

from page one

Commission buries plan for landfill

Sen. James Humphreys, D-Kanawha, spoke against the landfill, describing protesters as a "vocal majority" and an example of West Virginians acting to control their own destiny.

Curry said local destiny could be that there will be no area landfill after November 1992 if the proposal fails. He said the expense of having to export trash to distant landfills could be more than the county bargained for.

In other action Thursday, the commission heard prosecutor Bill Forbes explain that bringing charges against members of the county housing board probably would fail in court.

The explanation preceded several speakers in support of former housing executive Mike Edds, recently fired by the board. The firing has produced a public outcry from supporters who say Edds was fired without cause.

Edds' was fired after he formally complained to commissioners that his board chairman, Albert Harris, had caused him and other staff members to violate the state's open-meeting law.

One speaker, Bobby Hoyle, asked that commissioners probe a coverup of a "deeper problem" the agency.

Commissioner Duke Bloom told Hoyle that Forbes and County Attorney Betty Caplan had advis that the commission not act the issue.

"We disagree with the attorneys," Hoyle said.

Commissioners received a pe tion signed by about 400 people. I seeks the ouster of housing boa members Harris, Homer Han and Bobby Thompson, the majo ty whose vote fired Edds.

On another matter, Coun Manager Ron Gregory told co missioners $950,000 would transfered from the sheriff's ta office to the county general fu today.

The transfer prevents the co ty from going about $270,000 i the red, according to docume from the county clerk. The cou has been short on cash off and since February. A recent tax of ice report criticized the commi sion for its spending practices the clerk for poor record-keepin

Agreement reached

The Allegheny County Health Department announced an agreement with Reichhold Chemicals Inc. calling for improved air pollution control at its plant in South Fayette.

The agreement requires Reichhold to install a larger incinerator and a glycol recovery system to enhance the control of odor emissions from its polyester resin manufacturing operation.

The new incinerator will be the primary air pollution control device on vapors and waste water produced in the manufacturing process. The recovery of glycols, which are highly odorous and make up a significant percentage of the waste water, will further reduce the potential for odor emissions.

"These additional pollution controls are necessary because repeated breakdowns in the existing incinerator last spring resulted in numerous odor complaints from nearby communities," said Ronald J. Chleboski, deputy director of the Allegheny County Health Department Bureau of Air Pollution Control.

Reichhold can operate the plant until the new controls are installed and in the interim is allowed to use the current incinerator, but only on vapors and not waste water, the suspected source of odors when there is a breakdown. The waste water is presently being hauled away in tanker trucks to an out-of-state processing facility.

The company must submit by Aug. 15 an installation permit application for the new control systems, along with construction and compliance schedules that are subject to approval by county health officials.

Under the agreement, Reichhold is subject to stipulated penalties of up to $1,000 a day for failure to comply with any of its requirements.

A meeting to present the pollution control plan to the public has been scheduled or Aug. 16 at 7:30 p.m. at the South Fayette Municipal Building on Millers Run Road. Residents of South Fayette, Bridgeville and other municipalities in the area are invited to attend the meeting.

'Soft' clean coal

Departing from its usual approach of funding hardware solutions to reduce emissions from coal-burning power plants, the Department of Energy is sponsoring a major software-based project under its $5 billion Clean Coal Technology Program.

The program concentrates on giving utilities a tool for picking the right quality of coal to limit emissions and hold down the cost of electricity. At the same time, it gives coal companies the means to evaluate the value of cleaning or blending the coal they sell to upgrade coal quality.

Six power plants and 13 contractors and subcontractors spanning 10 states are involved. Furthermore, this is DOE's first signed project that concentrates on removing impurities before the coal enters a boiler, which in many cases is the most economical approach to emissions reduction.

The $17.4 million project will develop and validate the 'Coal Quality Expert,' a personal computer software program that will allow users to analyze and predict the consequences of burining a particular quality of coal in a given power plant.

CQ Inc., located near Pittsburgh, is teaming with Combustion Engineering Inc., a subsidiary of Asea Brown Boveri Inc. and a leading boiler manufacturer, to demonstrate and validate the program. It is hoped it will help plant operators refine their coal choices to comply with emissions limits, improve plant performance, lower plant maintenance and operating costs, and potentially extend plant life without paying more than necessary for the higher quality coal that makes these improvements possible.

CQ Inc. is a wholly-owned subsidiary of the Electric Power Research Institute (EPRI).

The completed product should be ready for testing by 1992. It will run on personal computers typically used by utilities, coal producers and engineering companies.

The DOE is providing $8.7 million, or 50 percent, of the project's total cost. The remaining funds will come from EPRI, the participating utilities, and other project members.

PITTSBURGH BUSINESS TIMES

Con-Serve offers air emission control experience

By KAREN POPP

The pending Clean Air Act, which is expected to be passed into law some time within the next year, is going to bring about changes in regulations governing the disposal of hazardous and residual waste, as well as those involving pollution control, and these changes will especially impact small to mid-sized companies who do not have the resources of larger companies.

One consulting firm which is positioning itself to service these companies in the vastly changing market is Con-Serve, Inc. Consultants, environmental and energy engineers in Bridgeville. The firm provides a wide range of pollution control and engineering services.

Harold L. Shelton, founder and president of the firm, said he began the business out of his home about one-and-a-half years ago on a part-time basis while working full time for Process Combustion Corp. in the South Hills.

"I would work at night, on the weekends and I used vacation days," he said.

His jobs were gained through referrals.

After a short time, the part-time work took more than Shelton's part time so he decided to quit his job at Process Combustion and devote all his time to Con-Serve. Last month, Shelton, who has degrees in chemistry and materials engineering, moved into offices in Bridgeville.

Three part-time employees work at Con-Serve.

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Shelton explained Con-Serve's position in the market.

"Most environmental engineering/consulting companies specialize in solid and water problems. With the pending New Clean Air Act, there will be need for companies with air emission control experience. Con-Serve is uniquely qualified to meet this technology gap," he said.

"We are a professional, experienced company specializing in air emission solutions. Our niche is the small to medium size company which will be impacted by the new laws," he added.

This market niche is especially suited to Con-Serve because the small to medium size companies cannot afford the fees of the larger consulting firms.

"Literally 300 to 400 companies will be affected (by the legislation). They do not know where to turn," he said.

Shelton said passage of the Clean Air Act will make regulation of air emissions more stringent.

"Currently, laws allow for the Best Achievable Control Technology (BACT) in pollution control. New laws will require Maximum Achievable Control Technology (MACT). This may include single or combined technology to attain new emission limits," Shelton said.

Jay C. Klaus, who is aiding in the sales and development efforts of the company, said the regulations will especially impact this area because Allegheny County is a non-attainment area as far as air emission standards.

"Allegheny County does not meet federal standards. Guidelines must be imposed to get something done," he said.

Shelton said typically Con-Serve is called in by a company after it has been contacted by the Department of Environmental Resources concerning some type of violation.

"The solution may be as simple as changing chemicals to modifying of operating parameters to methods of operation

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to equipment modification," Shelton said.

Charges for Con-Serve's services range from $500 to $1,000 for an opinion which includes touring a facility and studying data to $15,000 to $30,000 for permitting, testing and designing.

"We specify the best and most cost-effective solution," Shelton said.

The firm currently has five clients, including Penn Tank Disposal in Sewickley. It has done work for eight clients in all including those in the hospital and chemical industries.

Projects it has completed or which are in progress include: thermal oxidizer upgrade study, equipment conceptual design and optimization trade off study and thermal oxidizer modification and operational improvement program for the chemical industry; solid waste incineration up-grade to new pending environmental regulations for the hospital industry.

Also, compliance permitting, portable service station soil remediation system including statewide permitting (in progress), equipment selection and operator training, odor emission solutions for two different companies faced with environmental violation notices and complete thermal oxidizer design and specification for local equipment fabricator.

Con-Serve will design incinerators, but does not fabricate them.

Con-Serve is also working on a couple joint ventures with national equipment suppliers.

One major project the firm would like to accomplish is obtaining a state-wide soil processing permit.

Shelton did not specify a sales goal he is trying to attain.

"Every three months, we set the company vision. The Board of Directors will review it and see if we need to change the direction of the company or continue on that path. We want enjoy what we do and we want to have fun," Shelton said.

Chambers collects city recycling contract

By Sharon Voas
Post-Gazette Staff Writer

The city awarded a 15-month recycling contract yesterday to Chambers Development Co. of Pennsylvania Inc., the only bidder that offered to pay, rather than charge, the city to process recyclables.

Chambers, Pittsburgh's landfill contractor, will pay $2.18 for each ton of recyclables delivered by the city.

The Penn Hills company estimates the return on recyclables and the reduction in landfill fees will slash $500,000 from the city's annual trash disposal costs, said Chambers' spokesman Jim Leonard. The city pays $22 for each ton of trash it delivers to the landfill.

The local division of Chambers' national garbage disposal corporation will begin installing conveyor belts, balers and other recycling equipment Monday in its plant on 32nd and Smallman streets in the Strip District. Chambers will sort, process and sell what the city estimates will be 75 tons of recyclables per day.

Chambers will hire 30 workers per shift, and could have two or three shifts per day, Leonard said.

The plant will be running by Sept. 24, when recycling will become mandatory in the north and west sections of the city. Recycling will become mandatory in other areas of the city over the next year. But eager residents in the sections that start later will be able to take recyclables to drop-off centers starting in September.

City residents will be required to place clean, lidless plastic and glass containers and metal food and beverage cans into blue recycling bags — available at grocery stores — that will be collected by the city the same day as their trash.

In addition to Chambers, three companies offered bids that ranged from no charge to the city, to charge of $34.65 per ton. The oth bidders were Piccirilli Disposal S vice of Ambridge, Advanced En ronmental Consultants Inc. Wilkinsburg and Browning-Fer Industries of Pennsylvania Inc. Neville Island.

The city had requested separa bids for processing that would clude newspapers, but decid against collecting newsprint for r cycling because the market is volatile, said city recycling coor nator Maribeth Rizzuto. Chambe said it would charge the city $8. per ton if newspapers were include

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One-bag recycling said to be less costly

Consultant believes more will cooperate

By Sharon Voas
Post-Gazette Staff Writer

The city's one-bag recycling plan will cost substantially less than having residents separate recyclable garbage themselves, and it will encourage more people to comply with the recycling ordinance, a city consultant's report says.

"People who didn't believe what we said now have it in black and white," said city recycling coordinator Maribeth Rizzuto.

Rizzuto was referring to criticism of the one-bag plan by some recycling advocates.

If residents separate recyclables themselves, and 60 percent participate, it would cost the city $2.3 million to $5.2 million per year for each item collected for recycling, said the consultants, Henningson, Durham & Richardson Architecture & Engineering of White Plains, N.Y., and HDR Engineering Inc. of Pittsburgh.

That would build to a cost of about $11 million to $26 million for all recyclable items being collected by the city — plastic containers, beverage and food cans and clear and colored glass containers, Rizzuto said. That compares with a total cost of $2.1 million to $5.2 million per year for recycling under the city's one-bag approach.

The consultants assumed the city would have to send recyclables to a processing plant, even if residents separated them themselves. Rizzuto said the city administration did not ask for an analysis of the cost without a processing plant because, even if the materials were already sorted, the city would need a plant to sort out unacceptable materials and bale and process recyclables for sale to a recycler.

The consultant's report cost $58,000.

The mayor's office has said it chose the recyclable items because they were the ones that have the best sales markets in this region.

City Council will hold a hearing on the proposed recycling ordinance at 10 a.m.tomorrow in council chambers in the City-County Building.

The consultants said there would be several problems with having residents separate the materials themselves.

Fewer people would participate because of the extra effort, the report said.

The report also said that approach would be much more costly because the city would have to buy trucks with compartments in them for about $60,000 apiece, and the trucks would have to make more trips to the processing plant because they would have to dump as soon as one compartment was full.

The city also would incur higher costs for collection crews because each stop would take longer if the crews had to run back and forth between the curb and the truck for more than one container, the report said.

Neville Island site on cleanup list

The Environmental Protection Agency said yesterday that Ohio River Park on Neville Island and the Westinghouse Electric Corp. plant in Sharon were among 106 hazardous waste sites on EPA's latest national priority cleanup list under the Superfund law.

The action brings the number of sites on the list to 1,187, including 116 federal facilities, primarily Defense Department installations.

Ground water and soil at the 32-acre Ohio River Park, which was owned by the Pittsburgh Coke and Iron Co. from the 1920s to the 1970s, is contaminated with coking sludges, pesticides and cement-production wastes.

The intake for the Sewickley Water Works, which supplies water to 8,000 customers, is 1.7 miles from a pipe that drains contaminated sewer and storm water from the site, according to the EPA.

Hazardous chemicals on the site include benzene, a carcinogen; toluene, which may cause mutations, birth defects and damage to the liver, kidneys and brain, and other illnesses, the EPA said.

Mark Laskow, vice president of the Hillman Co., which owns the site, said his firm had spent $1 million meeting or exceeding requirements on testing and cleanup at the site and would perform any future work lawfully required by EPA, rather than having EPA do it and being reimbursed.

City gets leaf composting grant

Gov. Casey yesterday awarded Pittsburgh $643.000. and two other Allegheny County communities more than $250.000. to develop leaf-composting facilities.

McCandless was awarded $79.340 and Upper St. Clair was awarded $171.450.

"Leaves can make up 80 percent of the municipal waste collected during the fall months and, when combined with other yard wastes. total about 20 percent of the waste entering our landfills and incinerators each year." Casey said.

"For too long, we have burned and buried a natural resource that can be composted to provide a nutrient-rich and inexpensive plant mulch," he said.

Since he signed the recycling law in 1988. the governor said, more than $33 million in grants had been awarded statewide to help municipalities and counties in trash collection.

The grants are funded by a $2 fee on each ton of waste disposed of in landfills and resource-recovery facilities.

Under the new recycling law, communities with populations of more than 10.000 are required to start recycling leaves and three additional materials by Sept. 26.

Communities with populations of more than 5.000 must implement recycling by September 1991.

The law also prohibits disposal facilities from accepting shipments comprising primarily leaf waste after Sept. 26. unless composting facilities are provided on site.

The Casey administration plans to award grants worth a total of $3 million to help develop leaf composting facilities across the state.

PITTSBURGH POST GAZETTE

Penalties paid

The Department of Environmental Resources said Shenango Inc. of Allegheny County has paid $275,000 in civil penalties for illegally discharging industrial wastewater into the Ohio River.

Charles Duritsa, DER regional director, said the firm refused to comply with DER permit requirements for wastewater monitoring and treatment at its Neville Island coke and iron facility. The firm appealed the standards of its 1985 National Pollutant Discharge Elimination System permit to the state Environmental Hearing Board.

The U.S. Justice Department last month fined the firm $100,000 in criminal penalties for discharging pollutants in violation of the company's NPDES permit. An environmental engineer employed at the facility also was fined $10,000 for falsifying waste records.

The U.S. Environmental Protection Agency is seeking civil penalties against Shenango for violation of the federal Clean Water Act.

Duritsa said DER issued a new NPDES permit to the company in March. The permit requires Shenango to provide DER with a comprehensive bio-monitoring plan for the Neville Island facility and begin continuous wastewater monitoring at the plant's main discharge point.

The new permit also sets strict wastewater effluent limits and requires the firm to recycle and monitor blast furnace wastewater discharges by Sept. 10.

Duritsa said the firm waived its right to appeal the new permit requirements as part of the penalty agreement.

PITTSBURGH BUSINESS TIMES

CHMR signs agreement

The Center for Hazardous Materials Research (CHMR) at the University of Pittsburgh has signed a joint agreement with the National Foundation for Environmental Protection in Warsaw, Poland, to work together on a wide range of environmental matters of importance to both nations.

The agreement was signed in Warsaw by Samuel A. Schulhof, chairman of CHMR, and Andrzej Walewski, president of the National Foundation for Environmental Protection and vice minister, Ministry of Environmental Protection and Natural Resources, State Inspectorate for Environmental Protection.

The agreement pledges both parties to undertake projects that address the environmental and waste management problems associated with industrial, agricultural and urban areas. This effort will involve joint scientific and public policy research on environmental management and bilateral transfer of environmental technology.

In addition, the agreement calls for the involvement of other Polish institutions, including the Technical University of Warsaw, and other affiliated organizations of the University of Pittsburgh. The National Environmental Technology Applications Corporation (NETAC), a subsidiary of the University of Pittsburgh Trust, will be a key participant.

NETAC gets contract

The National Environmental Technology Applications Corp. at the University of Pittsburgh Applied Research Center has been awarded a contract from Lancy International Inc., an Alcoa Separations Technology Co. headquartered in Pittsburgh and specializing in wastewater treatment design, manufacture and installation. NETAC will provide an independent review of Lancy's Biotower technology, a biological treatment system used in both the remediation of hazardous waste disposal facilities and treatment of industrial wastewaters.

Under the contract, NETAC will conduct a third-party review of the Biotower's operating performance at various commercial installations where the system is in operation. NETAC will also oversee a side-by-side laboratory bench study comparing the Biotower with a standard activated sludge process which has historically been used to treat these types of wastewaters.

Lancy's Biotower has been available to industries nationwide for approximately four years and is being used in a wide variety of industrial applications from treatment of wastewater at oil refineries to treatment of leachates at solid waste landfills.

PITTSBURGH BUSINESS TIMES

Pittsburgh Post-Gazette: Thursday, August 30, 1990

CMU to launch research for garbage disposal firm

By Sharon Voas
Post-Gazette Staff Writer

Chambers Development Co. Inc. has turned to academia for research on how to make garbage disposal cheaper and safer for the environment.

Chambers, a Pittsburgh-based national garbage disposal company, announced yesterday that it had given Carnegie Mellon University a $400,000 garbage research grant.

"We believe important solutions [to the nation's waste disposal problems] can be created by active cooperation between industry and academia," said John Rangos Sr., president and chief executive officer of Chambers.

There was a time when all a person needed to start a garbage dump was a piece of land and a bulldozer, said Francis McMichael, the director of Carnegie Mellon's Center for Solid Waste Management Research, who will lead the studies for Chambers.

Now, landfills must have liners, elaborate piping systems to collect the polluted water that is created whenever rainwater percolates through the trash, the capacity to monitor seepage of pollution into groundwater and systems to collect methane gas, he noted.

"Modern landfills are complex and expensive technical facilities that require an extensive knowledge of engineering, geology and chemistry," McMichael said. "Today, environmentally safe landfills cost between $250,000 and $500,000 per acre to develop."

At those prices, researchers around the country are hustling to find ways to economize on garbage disposal, McMichael said.

Carnegie Mellon researchers will use the Chambers grant to conduct chemistry and physics studies of what is called airspace optimization — how to pack the maximum amount of trash into each $10-per-square-foot piece of landfill space.

They will study the chemistry of extracting metals, which can be dangerous pollutants, from leachate, the polluted liquid that drains through the trash.

And they will research the feasibility of tapping methane gas, an explosive gas that seeps from landfills and contributes to global warming, for use as a fuel to heat and distill pollutants from the leachate.

Pittsburgh Post-Gazette: Thursday, August 30, 1990

Getting pollution under control

Some of the improvement in toxic emissions by Allegheny County industries noted between 1988 and 1989 may be paper gains, reflecting changes in the way discharge estimates are calculated. Much is the result of costly control measures. But the bottom line is a far more encouraging picture of the situation here even before further restrictions are imposed through the pending reauthorization of the Clean Air Act.

In 1988, an estimated 10.2 million pounds of toxic air pollutants were being added to the atmosphere by industry here. A year later, however, by the industries' own reckoning, that figure had been reduced by nearly 30 percent to 7 million pounds, a Post-Gazette analysis has found.

Where the decline has not been as marked is in benzene from coke ovens, a chemical known to cause leukemia and other diseases, though in what concentrations is not certain.

What is known is that the emission level of that carcinogen still accounts for nearly a third of the total industrial pollution volume here and is being produced at a level far exceeding those recorded in comparable metropolitan areas.

But it is hardly a concern going unaddressed. Last September, the U.S. Environmental Protection Agency issued stringent regulations requiring that by this time next year measures be taken to reduce benzene emissions by more than 90 percent.

In response to the government's demand, the USX Corp. has commissioned a gas-blanketing system for its huge Clairton Coke Works that, along with other control measures, is expected to cost between $40 million and $50 million. The company fully expects that the devices will be installed in ample time to meet the EPA's cleanup deadline.

Whether the Clean Air Act reauthorization, now in a House-Senate conference committee, will incorporate even stiffer benzene controls on the coke works — so essential to USS's steelmaking operations here — is uncertain. The House version of the legislation calls for a six-year study to determine the extent of that and other coke-related pollutants and how they can be eradicated.

While it is encouraging to observe such noticeable improvement in pollution levels here, an environment in which just 12 industrial firms are spewing some 6.5 million pounds of dangerous pollutants a year is not one in which anyone should feel in position to breathe easy. Not yet.

THURSDAY, AUGUST 30, 1990

USW makes environment a contract issue

By Jim McKay
Post-Gazette Staff Writer

TORONTO — Abandoning traditional beliefs that industrial smoke meant jobs and that pollution was a byproduct of prosperity, the United Steelworkers union is putting the environment on the bargaining table.

Delegates to the union's national convention here today will debate policy aimed at bridging the often opposing concerns of environmentalists and workers whose livelihood depends on industries that pollute.

"We cannot serve our members by ignoring environmental issues. We cannot protect them by pretending to resist change," the USW said in a position paper distributed to the convention delegates.

The USW is proposing job protection negotiations for workers who report suspected environmental problems in the work place. And it wants industrial employees to have the right to refuse to do work that jeopardizes the environment, just as they can now refuse to do unsafe work.

The USW is also endorsing income protection and career training for workers who lose their jobs because of environmental problems.

The first strike over issues resulting from a pollution-related, government-ordered plant shutdown is going on here in Canada, where Uniroyal Chemical Ltd. of Elmira, Ont., was forced to close pesticide production that was polluting water.

At the same time it pursues job protections, the USW wants to continue lobbying for laws that improve air and water quality, reduce toxic waste and restrict the use of hazardous chemicals.

"There's no reason we cannot have ... environmental policies that are as concerned about community benzene levels as they are about corporate bottom lines, that look with equal fervor at closing the ozone and opening up the pathway to full economic opportunity and security," USW President Lynn Williams told the convention.

The environment is a politically contentious issue for the union, which is supporting passage of a Clean Air bill now before Congress that would moderate auto exhaust emissions, industrial venting of air toxics and acid rain.

The union's support of the bill worries Charles Grese, president of USW Local 1557 at USX Corp.'s Clairton coke plant in Pittsburgh's Mon Valley.

According to company reports filed with the state Department of Labor and Industry, the plant is by far the single largest source of air pollution in Allegheny County. It dumped nearly 3 million pounds of pollutants into the air last year.

"I'm in favor of clean air. I'm in favor of keeping our plant open," said Grese, who is concerned that the plant will not meet Clean Air standards, even if equipped with technology now available.

Clairton employs about 1,700 USW members and produces 12,500 tons of coke, a steelmaking ingredient, from coal every day. Coking byproducts include natural gas that fuels USX's Edgar Thomson and Irvin plants in the Mon Valley.

The USW and USX are at odds over industry's request for a 30-year moratorium on coke oven controls once they install equipment available now.

"We don't want to be tied in to today's technology for 30 years," said Michael Wright, the USW's health and safety director.

"Our biggest concern with the industry position is that there's nothing in it that drives continuing improvement," Williams said in a break from convention proceedings.

Grese said eight of 12 coke oven batteries at Clairton will need to be rebuilt over the next several years at an estimated cost of $300 million each. Once rebuilt, will they meet emission standards?

"Is the company going to spend $300 million on a battery if we can't put a match to it," he said. "We may be seven to eight years away from a total shutdown under this [Clean Air] bill."

Wright, however, said the union is pushing for exemptions that would allow older batteries such as those at Clairton to be rebuilt and not be subject to stricter requirements imposed on new equipment.

December 1, 1988

Pitt to run environmental technology center

By Ralph Haurwitz

The Pittsburgh Press

The federal government has chosen the University of Pittsburgh to operate a $9 million, first-of-its-kind program designed to accelerate the commercialization of new technologies for solving environmental problems.

Under a $9 million cooperative agreement with the U.S. Environmental Protection Agency, Pitt will operate the National Environmental Technology Applications Corp., a non-profit organization. University officials said the venture will eventually employ 80 to 100 people.

Pitt President Wesley Posvar and EPA Administrator Lee Thomas have scheduled a news conference for Monday in Pittsburgh to announce the program formally.

University and federal officials said the organization will identify promising technologies for dealing with hazardous waste, air pollution and other environmental problems and help usher those technologies into the marketplace.

The environment is one of the most rapidly growing fields of technology. Specialists estimate that the nation spends $80 billion annually on pollution control and the amount will increase to $100 billion by 1995.

"It is clear that to bring environmental technology out of the laboratory and into the marketplace with the approval of government, a strong public-private sector partnership is required. NETAC will help forge that partnership," Posvar said in a statement.

The EPA's Thomas said in a statement that the new group "will be a positive force for changing the way government and industry work together in the environmental area."

The agreement calls for the EPA to provide $1 million for the program's first year of operation, with an additional total of $3.5 million possible in the subsequent three years. Pitt must match the EPA grants with equal sums from a combination of public and private sources.

Pitt and the EPA signed the cooperative agreement forming the new venture in September. The organization is expected to be fully operational within two years.

The technology concern will have its own board of directors and will operate as a subsidiary of the University of Pittsburgh Trust, an arm of the university. Pitt is providing research laboratories, equipment and office space at no cost at its Applied Research Center in Harmarville, the former location of the Gulf Oil Corp. research complex.

Samuel Schulhof, Pitt's vice president of research and chairman of the new organization, said it will provide a wide range of services. For example, a company that has developed a new technology for eliminating odors from sewage-pumping stations could have its system tested and

1.

If the technology works, the Pitt researchers would write a report endorsing it, which the company could use in its marketing efforts. In addition, other specialists at the Pit' group could help the company lin up financial support from ventur capital firms and other sources.

Michael Mastracci, an EPA engineer familiar with the project, said i will be essentially an instrument fo "getting a piece of research an development to the K mart shelf.

The program further expand Pitt's role in the environmental fiel The university formed the Center fo Hazardous Materials Research, als a non-profit corporation, two yea ago. The center now does $2.5 mi lion worth of business a year.

Schulhof said the technology unit will enhance not only Pittsburgh's reputation for advanced science but also Pennsylvania's.

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Post Gazette 12/2/88

Environment technology center at Pitt

By Sharon Voas
Post-Gazette Staff Writer

The University of Pittsburgh will be the home of the nation's first center designed to get more environmental technology out of the lab and into the field.

Lee Thomas, administrator of the federal Environmental Protection Agency, will announce the creation of the $9 million center on Monday.

The EPA will put up $4.5 million for the National Environmental Technology Applications Corp., as the center is to be known. Pitt will raise a like amount. It eventually will employ 80 to 100 people.

Pitt also will donate substantial lab and office space at its Applied Research Center in Harmar. It is expected to be operating at full capacity within two years.

Pitt proposed the idea of such a center to the EPA. The purpose is to overcome hurdles that keep environmental technologies from getting to market, said Darwin Wright of EPA's Office of Environmental Engineering and Technology Demonstration.

"We found there was a lot of good environmental technology in the pipeline, but it wasn't getting out," Wright said. "Until you can buy that technology, you haven't solved the environmental problem."

The pressure to get the technology to market is increasing, he said. The cost of cleaning up the nation's hazardous waste sites is expected to reach $200 billion over the next 20 years. Last year alone, industries and the federal government spent nearly $80 billion on pollution control.

Sam Schulhof, associate vice president for research at Pitt, will be the chairman of the new center.

He said there are a number of new technologies the center may help get to market. Among them are ways to safely dispose of asbestos, methods of detecting buried hazardous wastes and bacteria that can eat them.

Pitt's Harmar site to study environment

By Mark Celender
Allegheny County Bureau

HARMAR — Within the next four years, this township's name could be on the lips of every corporate head who has a stake in protecting the environment.

The University of Pittsburgh has announced that its research center in Harmar — the former Gulf Oil property — will house a 30 million corporation to improve the development of environmental technology.

"This really, indeed, is big business," Pitt president Wesley Posvar said in announcing the creation of the National Environmental Technology Applications Corp.

Pitt and the federal Environmental Protection Agency each will pay $4.5 million over the next four years to finance the corporation, which is expected to create 80 to 100 jobs by the mid-1990s.

The primary goal of NETAC will be to identify promising environmental technologies being developed by the government and private sector, and to see that those technologies are brought to the marketplace.

"NETAC will be a positive force for changing the way government and industry work together in the environmental area," EPA administrator Lee Thomas said yesterday.

Thomas said the Harmar site was chosen in part because of Pitt's willingness to devote much of its office space, research labs and other equipment already in place at Pitt's Applied Research Center in Harmar.

"Pitt has the academic talent and facilities to move this concept forward," Thomas said of the joint venture, which will be supported by both public and private money.

Thomas said NETAC could become an internationally known center for finding answers to environmental problems such as oil spills, reduction of hazardous waste and air pollution.

"This center could become the central clearinghouse to better technology for industries throughout the world," Thomas said.

Posvar said NETAC could open untold opportunities for employment in this area, given the growing need for improved environmental technologies.

Posvar said the government and industry last year spent an estimated $80 billion on environmental controls and that the spending rate is growing at 6 percent annually. He said another $100 billion is spent for the cleanup of hazardous waste.

Posvar said NETAC could attract a good share of that business to this area once it demonstrates it can help industry develop the technology needed and sell it.

Samuel Schulhof, chairman of NETAC, said the firm has until Dec. 15 to submit a more detailed plan of operation to EPA. He said the agency and Pitt signed contacts for the joint venture Oct. 1.

While part of NETAC's operations will include testing hazardous waste and other harmful materials at the Harmar site, Schulhof said there will be no danger posed to the community.

"Any sort of materials we bring on the site will be in test quantities. There will be nothing in the way of large waste dumps or anything like that," Schulhof said.

He said NETAC will research environmental problems throughout the world to determine what are the primary needs, and from there decide which technologies look the most promising and could use the support offered by NETAC.

"Our biggest problem will be how we will determine which technologies to work with first," Schulhof said.

He said Pitt already received 50 to 60 calls from prospective developers of environmental technology

CANADIAN CONSULATE
CLEVELAND, OHIO

Canadian Consulate

Cleveland, Ohio

Protection of the environment has become a serious issue in northern Ohio. In 1988 Ohio produced over 17 million tons of solid wastes. In 1987, 130 million pounds of toxic chemicals were released into the air, and in 1986 Ohio produced over 3.5 million pounds of hazardous wastes. There are over 1,000 identified abandoned hazardous waste sites in Ohio for which cleanup has not begun.

This paper is a brief summary of the environmental issues in northeast Ohio found in newspaper articles from the "Cleveland Plain Dealer", the "Columbus Dispatch" and the "Toledo Blade".

With respect to residential wastes, most municipalities have implemented recycling programs to reduce the amount of wastes destined to landfills. The municipalities project a 25% reduction in wastes going to the landfill. The recycling programs include newspaper, glass, tin cans, aluminum cans and selected plastics (plastic pop bottles). This program was developed as a last resort to extend the life of landfills, as it is estimated that all available space will be filled by the mid '90s.

The residential programs have already experienced problems, such as increased costs due to rigid EPA standards, poor participation, and, to some extent, have been victims of their own success by creating an oversupply of recycled materials. To combat some of these problems, municipalities are considering buying fines for individuals not participating in the program.

The process of treating industrial wastes is extensive and, therefore, is more costly. In spite of these costs, programs requiring companies to recycle 100% of certain non-hazardous wastes are being met. The alternatives for hazardous wastes, however, are still under review. In this regard, the Ohio state government is considering passage of legislation to minimize the production of hazardous wastes, while the EPA continues to monitor the waste disposal companies and private business (incinerators, treatment facilities or landfills) for compliance. The problem remains, however, that industry continues to produce hazardous wastes at a rate that exceeds society's ability to deal with it.

A proposed solution to minimize the amount of hazardous wastes would have industry develop production techniques that address pollution up front. While this would initially increase the cost of production, it would considerably reduce or eliminate the cost of cleanup and disposal after the fact.

One article pointed out the necessity for potential purchasers of businesses to explore environmental matters before the acquisition. Companies have learned that purchasers can be held liable for hazardous wastes deposited years ago by previous owners. The result has been pre-acquisition environmental audits, which are becoming as routine as financial studies. It is estimated that environmental audits are a $400 million industry today.

This rapidly-growing environmental industry presents opportunities for Canadian companies in areas such as the design of environmentally-friendly containers, developing alternative uses for recycled materials, establishing production methods to reduce hazardous wastes, developing treatment techniques (air, water and soil reclamation), and cleanup procedures.

COVER STORY

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Now Comes the Hard Part

By Lynn Wasnak

Dealing with Ohio's environmental pollution requires time, effort...and money.

Pollution, the optimists say, is a misplaced resource. In the wake of the environmental awareness charged up by April's Earth Day, it's impossible to ignore the ugly truth that Ohio is laden with such "misplaced resources." Consider:

•Ohio consistently ranks among the top five states in hazardous waste generation. After analyzing industry reports, Ohio Citizen Action, a coalition of environmental groups, noted that 62 Ohio manufacturers released about 230.6 million pounds of toxic chemicals and compounds in 1988.

•The state ranks near the top of the list in air pollution. Some 130 million pounds of toxic chemicals were released into the air by Ohio industry between 1987 and 1988.

•Despite comprehensive solid waste management legislation passed in 1988, Ohio's solid waste crisis is far from resolved. More than 17 million tons of garbage was landfilled in 1988, up from 13 million tons in 1987. Old landfills continue to close, while new landfills or incinerators cannot be opened due to citizen opposition.

•Lakes, rivers, and groundwater all need cleanup, increased monitoring, and better protection. From Lake Erie to the Ohio River, our surface waters suffer from soil erosion, chemical runoff, sewage, and litter. Still, surface water problems are easier to identify and solve than those involving ground water aquifers which provide drinking water to some 50 percent of Ohio's residents.

•The Ohio Environmental Protection Agency continues to duke it out with the U.S. Department of Energy over mismanaged nuclear processing plants in Piketon and

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Fernald. Fernald is located directly above the Great Miami aquifer which provides drinking water to Dayton and other southwest Ohio communities. It recently received the dubious honor of being named by the General Accounting Office as the nation's number-one health risk among 30 Department of Energy nuclear weapons sites around the country.

In the early days of environmental awareness, waste management seemed to be the cure for pollution. But cleaning things up, though essential, is simply not enough. The next generation of pollution technology focuses on waste source reduction and recycling—in short, waste *minimization*, rather than waste *management*.

The concept makes sense. But how will it work? Who will clean up this mess? Who will cut back the flow of the waste stream? Who will pay for the inevitable changes in waste reduction, recycling, treatment, and disposal?

The answer is right in your mirror. Business people who feel they have been asked to do more than their fair share to solve the problem may be right. But that doesn't mean the new burdens will be transferred elsewhere.

Ohio's business will take a harder hit than those in many other states due to its legacy of heavy industry, agriculture, and dense population. For these factors are the root causes of pollution problems, in air, water, and land.

The Federal Clean Air Act, which passed the Senate early this year, and appears destined for approval in the House, is expected to cost Ohio's coal-burning utilities nearly $800 million annually for sulfur dioxide control to reduce acid rain pollution. If nitrous oxides also are included, add in another $370 million. And if the air toxics portion of the bill goes into effect, Ohio industries in general could face another $428-million pollution control cost—for a worst-case total in the neighborhood of $1.6 billion each year. The average electric rate increase could top 26 percent.

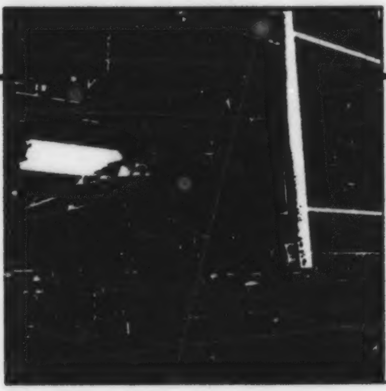
But there's more to the problem than money.

It's nearly impossible to site solid or hazardous waste facilities. WTI, a subsidiary of an East Coast company, was granted a permit for a hazardous waste incinerator in East Liverpool about five years ago, says Richard Shank, director of Ohio EPA. "However," he notes, "the company still has not been able to break ground." To add to the frustration, better technologies have been developed in the interim. Yet if WTI wants to change to a more modern process, it would have to repeat the permitting process from the beginning. "This is ludicrous," Shank admits.

Ohio's Pollution Fighters

Honda Motors, Marysville

Developed water-based paint line technology to reduce solvent emissions. Achieves 100 percent cardboard recycling: saves $1.5 million to $2 million in disposal costs.



Change in this nonsensical approach can't come without better education. "We see a critical need for citizen involvement," he adds.

However, most of the 100 Ohio-based citizen environmental groups are focused around a single community issue. "Most of these people have no background in technology," Shank explains. "There's a lot of emotional concern."

To help control public overreaction, the Ohio EPA holds public-information meetings when an environmental permit is applied for, before review begins. Industry sees this as a cumbersome procedure, but Shank thinks it is important. "We must take the time to deal with people in the community."

One leader of the community view is Steve Sedam, director of the Ohio Environmental Council in Columbus. His group is a federation of 95 environmental, health, and conservation organizations representing hundreds of thousands of Ohio citizens. Sedam says the progress of pollution control depends on perspective. "Certainly there have been some things done. They shouldn't be discounted. There's been some attention given to reclaiming sites, although there are well over 1,000 abandoned hazardous waste sites in Ohio that have been identified and for which clean up work has not even begun."

In 20 years the U.S. has spent more than $1 trillion on pollution control. Yet air pollutants, supposed to be reduced by 90 percent, are down only 18 percent.

Pat Walling, head of air pollution control at the Ohio EPA, says the federal Clean Air Act was weakened considerably in the area of controlling auto emissions, contributing to ozone pollution. Ground-level ozone is commonly known as "smog." High concentrations can cause chest pain, shortness of breath, and serious impairment of lung functions for people with respiratory problems. "Most urban areas in Ohio are in the nonattainment category [they don't meet EPA standards] for ozone," says Walling.

In an attempt to comply with federal regulations for auto emissions, inspection and maintenance (AIM) programs began in Ohio in 1988. At

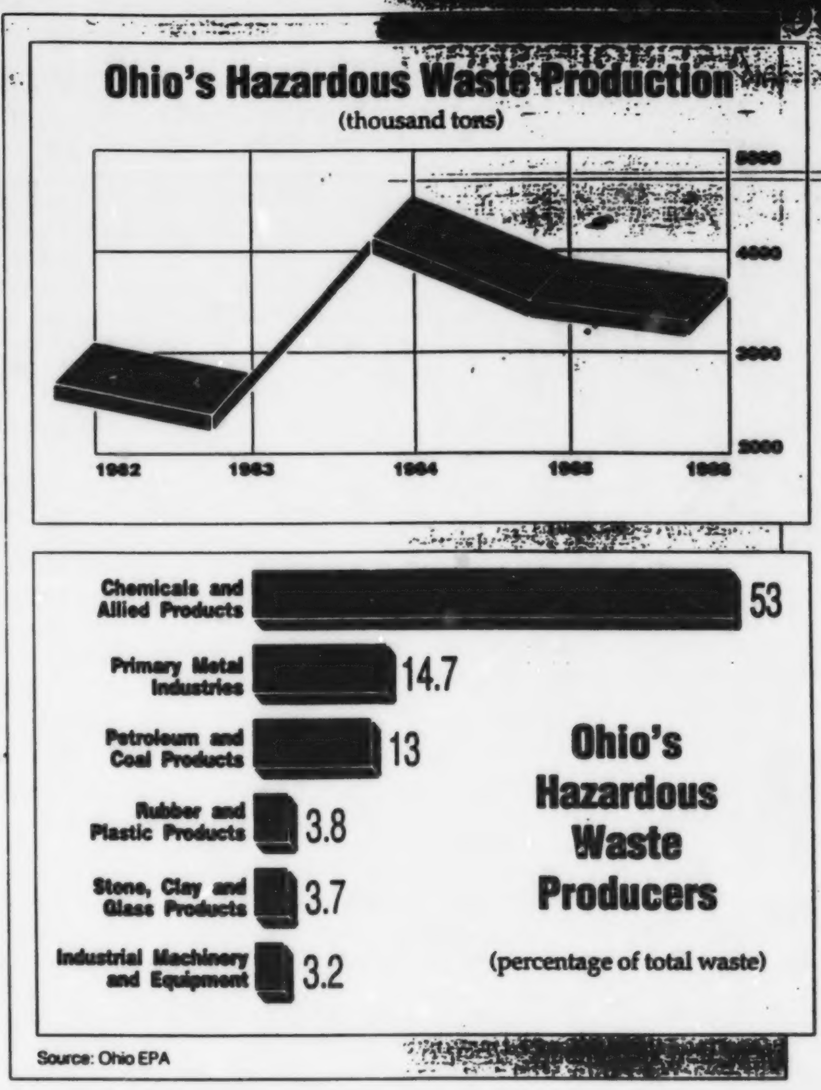
[redacted]

present, residents of Cuyahoga, Lake, Lorain, Butler, and Hamilton counties are required to have yearly inspections of air pollution control equipment on their 1980 or newer cars. (Cuyahoga County will have tail pipe emission tests on cars built since 1975.) Auto license plates cannot be renewed without the AIM certificate.

But while too much ground-level ozone is a health hazard, too little ozone in the stratosphere may be even more harmful. Ozone at high altitudes protects the global environment. Its depletion may cause increased skin cancer and global warming.

Debate continues on the cause and cure of the "hole in the ozone layer" over Antarctica. But this year, many Ohio businesses began paying an environmental tax on chlorofluorocarbons (CFCs) which are blamed for the thinning.

CFCs are found in such diverse products as air conditioners, foam mattresses, video games, and plastic foam cups. While manufacturers have been well aware of the CFC regulations, retailers and commercial users of imported products containing CFCs may not be so well informed. Businesses such as auto dealerships that held stocks of CFCs on January 1, 1990, must also pay a tax on the chemicals. The tax begins at about $1.37 per pound of CFC used in 1990, and rises to $2.65 a pound in 1993.



Source: Ohio EPA

TROUBLED WATERS

The problem of nonpoint source pollution (pollution where the source cannot be easily identified) affects numerous bodies of water within the state. Lake Erie, the Ohio River, and their tributaries are joined by seriously affected recreational lakes such as Indian Lake in Logan County, Winton Woods Lake in Hamilton County, and Sippo Lake in Stark County. Nonpoint source pollution includes such problems as agricultural runoff or improperly discarded hazardous waste.s

David B. Baker of the Water Quality Laboratory at Heidelberg College, Tiffin is conducting a detailed, long-term pesticide monitoring program in Lake Erie tributaries to assess ecological and human health effects of pesticide runoff from farms.

So far, river exposures in Baker's tests do not exceed health guidance levels proposed by the EPA, and do not reach levels that are toxic to fish. But the pesticide levels measured much higher than average concentrations for ground-water aquifers.

In 1987, 147 licensed landfills in Ohio accepted municipal and commercial solid waste. Most are not fitted with liners or leachate collection systems to protect ground water. Only one-third of all operating sites have ground-water monitoring wells. Some degree of contamination is shown in more than half of the wells.

In addition, hazardous household wastes such as disinfectants, cleaners, and polishes are often placed in solid waste landfills not designed to contain them.

Once the contaminants reach the ground water, cleanup expense rises dramatically. That's why prevention was addressed in the 1986 amendments to the national Safe Drinking Water Act.

In Ohio, about two-thirds of

Sorting cans to save the environment

The Cinti Enquirer Tues. Jul 31st A-9

The Cincinnati Enquirer/Joanne Rim

Fred Harmon of BFI Industries operates a recycling machine in Sharonville. It divides aluminum and non-aluminum cans.

First recycling year pleases city

Program isn't making money, but it is relieving landfills

BY SCOTT BURGINS
The Cincinnati Enquirer

Cincinnati's curbside recycling program celebrates its first birthday today — and looks back on a year that the city says was successful if not profitable.

About 60% of the 100,000 households in the program take their green recycling bins to the curb at least once a month, and 37% of them do it weekly, according to city figures.

But the city still hasn't made a dime from selling the newspaper, plastic and glass bottles, and aluminum cans, said Bob Case, head of BFI Industries of Ohio's local recycling project.

The city pays BFI $1.2 million a year to run the program. The company collects the material, sorts it and then sells it to other companies.

On any month that the company makes more than $50,500 from the sale of the recyclables, BFI splits the amount over that 50-50 with the city.

That hasn't happened yet. The closest BFI has come is $48,000, said Beth Bower, an assistant on the city-run Clean Cincinnati Inc.

But June could be the month BFI makes enough to share, Case said. The tally will be done in a few weeks.

"It would be nice to send the city a check," he said.

City officials do not expect the program to pay for itself, at least not for the first few years.

But they started voluntary recycling July 31, 1989, because local landfills are rapidly being topped out and could be filled in 15 to 20 years.

So far, the recycling effort has diverted away from landfills about 9% of the 9,200 tons of trash generated in Cincinnati annually, Case said.

The city is working under the shadow of a state law that aims for a 25% reduction in the trash generated by every Ohioan by 1994.

Case estimates that Hamilton County already is at 20% reduction, including curbside pickup and recycling efforts by local industries and people not eligible for the city project.

"I think it could reach 60% or 70%," said Boyd T. Riley, head of the city's Solid Waste Division. He is working with the county on ways to meet the state's 25% reduction goal.

Although pleased with the 60% core that use their bins at least once a month, the new goal is to start recycling programs in large apartment complexes, Bower said.

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A SERIOUS SHORTAGE

University of Cincinnati's Thomas R. Hauser

While the amendments of the Federal Safe Drinking Water Act have drastically increased the number of contaminants that must be monitored and regulated, they did not allocate any more money to state and local governments to pay for the increased testing and staffing required to carry them out.

There is a shortage of trained, certified treatment plant operators, especially for smaller systems. At present, 7,000 non-community public water supplies receive no monitoring or oversight from Ohio EPA due to lack of staff.

To alleviate this problem by 1994, the Division of Public Drinking Water needs to increase staff from 53 to 150. Ohio EPA's Division of Ground Water will need an additional 30 staff members. The extra staffing is expected to cost more than $7 million over the next three years.

Where will the trained technicians come from?

Thomas R. Hauser, Ph.D., heads several environmental programs at the University of Cincinnati. Before his retirement from the federal government, Hauser was director of hazardous waste research for the U.S. Environmental Protection Agency. He was involved in both the Love Canal and Three Mile Island environmental crises.

"Years ago, environmental engineering was a sidetrack occupation," says Hauser. "That situation has changed. Now salaries for newly graduated environmental engineers match starting salaries for those in the chemical industry—near $35,000," he says.

As one of his projects, Hauser directs the American Institute for Pollution Prevention (AIPP), founded jointly by the EPA and UC. AIPP will provide liaison between experts in pollution prevention and industries who need new, improved waste reduction techniques. It covers four areas of interest: economics, education, implementation, and technology.

According to Hauser, the AIPP will promote the use of "full-cost" economic analysis to emphasize the value of pollution prevention programs.

Ohio's 88 counties lack sufficient capacity for solid waste disposal. Only 25 counties have more than five years capacity. In 1988, Ohio's solid waste facilities received over 17 million tons of solid waste, including 3 million tons shipped in from out of state. Yet the EPA expects the tonnage of commercial and residential waste to increase another 20 percent by the year 2000.

Most recent estimates are that Ohioans recycle no more than 5 percent of solid waste, incinerate about 13 percent, and landfill the remainder.

Between 1987 and 1988, production of solid waste increased by 8 percent. "So we're not even keeping up with our own waste, much less the close to three million tons of out-of-state waste that are disposed of in Ohio annually," says the Environmental Council's Sedam.

Some Ohio recycling programs have been launched, but the results remain uncertain. In Akron, about 13,000 households recycle an average of 20 tons per week of rigid plastics, glass bottles, and aluminum cans. wTe Corp. receives, hand-separates, and markets the recyclables.

In Cincinnati, BFI Corp. operates a curb-side collection for single and multi-family households. At present, more than 60 percent of the 100,000 eligible households divert 10 percent of their waste from landfills.

But the recycling attitude is still in its infancy. Sedam believes it's a mistake for the public to insist that recycling be a profitable operation. "Every year we spend money to collect, burn, and bury waste. What would happen if we put half of that money into recycling?" he asks.

Hazardous waste is an even tougher problem. Some 900 firms in Ohio are categorized by the EPA as large generators of hazardous waste. An additional 8,000 businesses are listed as small-quantity generators. More than a dozen facilities treat and dispose of it. Though permitted hazardous-waste facilities are required to monitor ground water, several hundred landfills and waste ponds received unknown quantities of waste before regulation began in 1978.

LIABILITY RISKS

Very little is known about the long-term effects of these wastes, but the prospect gives bankers the heebie-jeebies, because of the liability risk. Since Maryland National Bank foreclosed on a property that turned out to be a $10-million Superfund site, banks have been rigorous in demanding environmental assessments before making loans.

Ohio has 29 Superfund sites on the EPA national priorities list, and additional sites are proposed. Each site is an actual or potential threat to public health, and is a financial burden to Ohio and its industries.

"It takes a lot of money to get rid of waste," says Hauser.

"The cheapest way is not to make

the waste in the first place."

It's rare to see pipes dumping effluent from a plant into a stream anymore. But sometimes at 4 a.m., strange colors pour from smokestacks. Worse, small waste generators may unknowingly hire firms posing as hazardous waste disposers. Instead of properly treating or disposing of the dangerous substances, they drive tankers around back roads at night deliberately releasing toxics on the roadway.

Conscientious business owners and managers are legitimately horrified by such possibilities—for both social responsibility and financial liability reasons. But an executive who does not take such responsibilities seriously must beware, says Thomas Hart, director of the energy and environmental committee of the Ohio Manufacturers' Assn. (OMA). He cites a recent federal court case in which a Michigan chief executive was found personally liable for pollution acts committed by an employee.

The 1,800 members of the OMA represent over 95 percent of the manufacturing companies in Ohio. Recently 74 members of the OMA joined with the Ohio Department of Development to assess the concerns of Ohio industry regarding hazardous waste minimization and treatment. The study, conducted by Battelle Memorial Institute, was released in January.

Although numerous substances fall into the category of hazardous waste, six problem areas were most frequently identified by Ohio's industries. Most commonly cited was waste water contaminated with oils or hazardous materials, followed by volatile organic compounds, used solvents, cutting oils, plating wastes, and the need for chorofluorocarbon substitutes.

Environmental enforcement needs overhaul, says Richard Tybolt, professor emeritus at Ohio State University. Tybolt, an environmental economist, also served as national chairman of the Sierra Club's economic commission from 1975 to 1985.

ENFORCEMENT NEEDED

"I think a large part of the business community wants good enforcement," says Tybolt, "yet nobody wants to pay for it. State legislators compromise with the goals of pollution reduction with cumbersome procedural requirements. Weak enforcement penalizes the conscientious companies. Industry should be its own watchdog in this regard."

Ohio's Pollution Fighters

Procter & Gamble Co., Cincinnati.

Test marketing refillable containers and bulk products. Implementing use of 25 percent recycled plastic in containers to expand plastics recycling market.

He'd like to see us consider the European model of waste regulation. "In the U.S. we try to do it by legislation. In Europe, they have a subsidy, so it doesn't cost more to do it right. Maybe we should stop trying to control industry and force it to comply at its own expense. Maybe we should subsidize environmental improvements of business, at the cities' expense, as we do with residential trash disposal," says Tybolt.

Ohio EPA currently employs around 800, and operates from a [redacted]

"The days of funding environmental programs through the general revenue fund are coming to an end," feels Ohio EPA's Shank, not just in Ohio but everywhere. In the future, more environmental agencies will be funding through fees, licenses, and permits.

Complying is costly, and the cost is rising. According to the National Governor's Assn., the cost of landfilling hazardous waste rose over 180 percent between 1983 and 1987, while the cost of incineration of clean, high-energy liquids rose an incredible 1,950 percent. Resource recovery for organic compounds and oils rose 104 percent. Deep well injection rates rose 157 percent for oily waste-waters. The only disposal cost that dropped was injection of toxic rinse water, which fell 56 percent during the same period.

Tybolt is a proponent of taxes on emissions. "The old-fashioned command and control techniques don't spur innovation," he states.

"Steel can't be made without creating certain toxic chemicals," says OMA's Hart. "For example, Armco is investing $5 billion to bring state-of-the-art pollution controls to its Middletown Works. It remains to be seen how much of that will need to be spent on air toxic control facilities."

The next important step for Ohio manufacturers, says Hart, is the formation of an industrial cooperative, where industries could share their problems and solutions for environmental regulations.

Sometimes state rules get in the way, however. A firm that wants to install air emission equipment can't get a state loan. Those loans are tied to increased jobs. If the company is preventing pollution but not enlarging staff, the state doesn't help.

"We give lots of loans and grants for job creation. Perhaps some could be focused on pollution control or waste reduction," Hart suggests.

Better ways to make waste minimization attractive would be reduced permit costs and multi-media permitting, tax abatement, and funding to participate in waste minimization activities.

Smaller businesses that can't afford environmental lawyers and consultants need special assistance, says Hart. Small industries with similar waste streams could be grouped together to solve special waste problems.

Also, there is no effective liaison between Ohio industry and the Ohio EPA. The proposed Center for Waste Minimization could serve this purpose, encouraging cooperation and reducing red tape.

In 1988 Governor Richard Celeste created a Waste Minimization Task Force composed of government, industry, academia, and environmental representatives.

In a preliminary draft of its official report, the group presents several recommendations. A primary goal is the establishment of a Waste Minimization Technical Center, modeled on the Thomas Edison Centers, and administered by the Department of Development in consultation with the Ohio EPA.

The center would focus on the research and process development of waste minimization, including source reduction technologies for specific industries. Also, it would develop new products and markets for recycled materials.

Estimated annual cost of the waste minimization program, as defined by the task force, is about $22.5 million. Of that, $12 million is destined for loans and grants, $6 million for the tech center, and $2 million for technical assistance and clearinghouse services provided by the Ohio Department of Development. Another $2 million would be used by Ohio EPA for regulatory activity and data management, while staffing and expenses would cost about $250,000 annually.

Although the OMA is basically in favor of a waste minimization center or central information system of some kind, its membership balks at the $22-million annual price tag.

"The state shouldn't go into research and development for pollution control. They want to pattern the center after the Thomas Edison Centers, but for our members, the jury is still out on the effectiveness of those centers," says Hart.

Where there's public outcry, the politicians stand in line. So it's no suprise that the Ohio legislature is currently considering several environmental regulations.

Ohio's Pollution Fighters

N-Viro Energy Systems Ltd., Toledo.

Created pasturization process that transforms sludge to fertilizer in seven days without odors, and eliminates heavy-metal concerns.

Perhaps the most notable are House Bill 661, and the similar Senate Bill 217. Both bills suggest incentives for reducing the amount of waste generated by business. They address the need to explore and expand the markets for recycled goods. The major difference between them is that the Senate bill also includes a bottle deposit provision.

Ohio EPA's Shank strongly supports the proposed recycling legislation. "It's aimed at market development. We feel if the markets are there for recycling, business will make it happen. You can't mandate people to recycle if there are no markets for the material."

HB 661 would fund the program via an additional $1 per ton tipping fee on solid waste. "This should raise about $17 million," says Shank. Of that, $14 million would be channelled to the Department of Development to improve markets for recycled goods.

"We have to build a recycling infrastructure," says Hart. "That's why we at OMA think HB 661 is a good bill."

Less-favored by the business community is the so-called "tough on toxics" bill, HB 611, sponsored by Representative Dan Troy (D-Willowick). Senator Lee Fisher (D-Shaker Heights) has sponsored the Senate version.

HB 611 would charge businesses a fee per pound of toxics emitted, regardless of the amount. A "polluter" could continue to pollute, but he'd pay the fee. Hart is opposed to this approach.

"Often at small and mid-sized plants the same person who does the taxes, OSHA, worker's comp, and the company picnic is asked to do all this reporting of SARA data. At some point, people say 'This is just nuts. I can't keep up with this stuff.'"

The manufacturing community is well aware that society's concern about the environment is not going to go away, says Hart.

It all comes down to the bottom line, says environmentalist Sedam. "Businesses should realize it's to their economic benefit to look more toward waste reduction, recycling, and promotion of environmentally sound products. There's a strong market for such products among consumers. And it's to their advantage to reduce their disposal costs and their liability costs by reducing the amount of waste they have to dispose of in the first place." ■

Tuesday, July 31, 1990/The Columbus Dispatch/

Improvements help trash plant meet most EPA rules

By Scott Powers
Dispatch City Hall Reporter

The trash-burning power plant has come a long way toward meeting state and federal environmental standards in the past three years, but it still has a way to go.

The plant has consistently met smoke pollution standards since the Ohio Environmental Protection Agency's crackdown in 1988, Tammy Hilkens, an EPA scientist, said in a briefing of the Columbus City Council yesterday.

The trash plant's smoke failed to meet EPA standards in 10 of 12 tests between 1984 and 1988, but the plant has met the standards in seven straight tests since 1988.

The testing was for opacity, or density. The Ohio EPA also tested for sulfur dioxide and nitrogen oxides, tests the plant has never failed.

There are no laws covering metals such as mercury and cadmium, though those metals also are monitored. The Columbus Health Department is studying possible health hazards of those metals.

Hilkens said Columbus "absolutely" will have to install smokestack scrubbers if the current proposed federal requirements are enacted.

Hilkens said the plant improvements are due to $13 million worth of pollution control devices installed since the EPA ordered changes.

Hilkens noted, however, that numerous other pollution devices are yet to be installed according to the agreement the city signed with the EPA in November 1988.

As soon as those devices are installed, the EPA will lift its enforcement order calling for daily monitoring of the stacks, she said.

Hilkens wrote in a report that the Columbus case "illustrates that the use of continuous emission monitoring data is not only effective in regulating compliance of the applicable air pollutant emission limitations but also is effective in increasing the efficiency of the . . . plant itself."

The federal EPA may soon require the most expensive devices yet, smokestack scrubbers. Those devices, which would reduce sulfur dioxide emissions, which are suspected of producing acid rain, could cost tens of millions of dollars. Hilkens said Columbus "absolutely" will have to install smokestack scrubbers if the current proposed federal requirements are enacted.

Her presentation drew a mixed response from the council. Hilkens said, "My job is to enforce the laws; it doesn't matter to me what it costs."

THE PLAIN DEALER, SUNDAY, AUGUST 26, 1990

States fear paint pollution

CINCINNATI (AP) — Workers sandblasting lead paint off the Brent Spence suspension bridge over the Ohio River may be exposed to high levels of lead in the airborne dust, Kentucky officials say.

Ohio and Kentucky officials said they worry about lead levels in the river and in the bloodstreams of workers removing the old paint.

They plan to monitor the area as work moves from Kentucky across the bridge toward Cincinnati.

Sandblasting began in April as part a $3 million bridge repainting project.

That project is a portion of a $46.5 million plan to rebuild a steep section of Interstate 75 known as "Death Hill" between Fort Wright, Ky., and the Ohio River.

In April, lead levels monitored near the base of the bridge in Covington, Ky., were eight times the federal standard, said Miley Twyman, regional supervisor for the Kentucky Division for Air Quality.

The readings dropped later that month, but still were more than double acceptable levels, Twyman said.

He said the readings didn't violate federal standards, which are based on a three-month average, because monitoring problems prevented accurate readings in May and June.

"You should take all the precautions that you can to stay out of the dust," Twyman said. "That would leave the main danger of the main route of exposure to be ingestion, so you have to make sure everything is washed — your hands and your food."

> *'You should take all the precautions that you can to stay out of the dust. . . . That would leave the main danger of the main route of exposure to be ingestion, so you have to make sure everything is washed — your hands and your food.'*
>
> — Miley Twyman, regional supervisor, Kentucky Division, Air Quality

Lead exposure is suspected of causing cancer, fetal damage and premature birth.

At high levels, lead exposure can cause brain and kidney damage, the group says in a 1987 report.

Bob Smith, director of the Northern Kentucky District Health Department, said samples taken in July from a pile of grit under the Covington end of the bridge showed high lead levels.

Smith said the department was trying to determine the significance of its test results.

Kentucky is considering testing lead levels in the blood of highway inspectors on the project, said Ralph Wolff, planning engineer for the highway department's Northern Kentucky office.

The Kentucky Division of Water also is reviewing the project because of concern over possible lead pollution of the Ohio River, said John Hornback, chief of the division's compliance and enforcement division.

The Southwestern Ohio Air Pollution Control Agency plans to start testing airborne lead dust on the Ohio end of the bridge, agency director Harry St. Clair said.

The new zinc primer and gray vinyl paint planned for the bridge do not contain lead, Wolff said. Painters hope to finish work this year.

INCISA U.S.A., the highway construction contractor, and its painting contractors have spread plastic on the bridge decks to collect as much dust as possible, said Dan Seevers, INCISA's project manager.

Federal air-pollution standards allow no more than an average of 1.5 micrograms of lead per cubic meter over three months.

An air sample on April 17 showed 11.5 micrograms per cubic meter, Twyman said. A sample on April 23 had 3.57 micrograms per cubic meter.

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EDITORIALS

A cleaner Ohio River

THERE'S some good news about water quality in the Ohio River basin: The paddlefish is back, as far upstream as Cincinnati.

There are a couple of reasons why this excites fisheries biologists.

The recovery of the paddlefish (and the mooneye and the slenderhead darter) means the river is getting cleaner throughout its length. The fish follow the clean water. "We have better water," said Ronald Preston, a biologist with the U.S. Environmental Protection Agency, "for all our uses: for industrial uses, for drinking water."

The other cause for excitement is the paddlefish itself. The long-snouted fish produces $50-a-pound caviar, and a single fish can produce 10 pounds of roe. So an extended range for the paddlefish is a commercial benefit for the river.

The fish species began returning to the upper Ohio in the 1980s, as better water-quality standards took effect. Industrial pollution during the first half of the century had driven many fish species south, say biologists. In recent decades, the paddlefish had been limited to Ohio River waters below Louisville. Fisheries experts say the fish is expanding its range by about 20 river miles a year.

This good news is tempered by the realization of what remains to be done. Even though fish are thriving in the Ohio, PCBs and other contamination make many species unfit to eat. Pollution control efforts now focus on runoff from farms and construction sites, municipal waste discharges, cargo spills in the river and storm overflows.

The river will never be back to its pure state of the last century, and no one should expect it to. But rivers have remarkable recovery powers if given a chance. By keeping the pressure on polluters, perhaps we can enjoy more success stories like the paddlefish — and the cleaner environment they represent for all species, including humans.

MEETING THE CHALLENGE:

ENVIRONMENTAL AND LEGAL REALITIES IN THE STEEL INDUSTRY

by Allan Kanner
and Dennis R. Pollison

This material will be covered at a session in Pittsburgh, October 2, 1990.

Perhaps no other heavy industry has encountered the drastic changes and challenges that have faced the steel industry. While the natural resources of the United States have been regulated for more than a century, it has only been since 1970 that the United States Environmental Protection Agency has joined its sister agencies at the state and local levels in creation and enforcement of ever stricter pollution abatement and control programs for the steel industry.

In the past, industry too often focused on the negative aspects of environmental compliance. Today, however, we are seeing a new imperative for management; a new leadership strategy to meet community, corporate and regulatory requirements.

There is now an historic opportunity for the steel industry to improve environmental protection while reducing its costs. Applying the concept of prevention to environmental protection is a major change in thinking for nearly everyone.

Indeed, some members of the steel community have found that they can do quite well by doing good. This is due to the substantial economic impact that environmental regulations can have on the cost of producing steel.

The challenge is to lower costs in three general ways: First, lower the cost of environmental compliance without sacrificing quality. This can be done in a number of ways:

- eliminate waste streams that necessitate the purchase of expensive pollution control equipment;
- adopt good operating practices to prevent the mixing of hazardous and

cont. page 2

cont. from page 1

non-hazardous waste; and

- avoid costly production shutdowns with cost effective operation and maintenance of pollution control equipment.

Second, environmental compliance "costs" should be transformed into profit-making activities. Thus, a significant cost is the lost opportunity cost of failing to profit from various recycling options.

Third, avoid unnecessary mishaps which, if not identified early, may lead to environmental fines and penalties, third party citizen suits and toxic tort litigation, and even criminal liability. Implementation of a solid, in-house training and reporting system can go a long way towards avoiding these entirely avoidable costs.

Since many pollution prevention strategies are new and reflect a new approach to environmental protection, it is vital to learn how to:

- develop an in-house consensus in favor of a pro-active environmental program;
- evaluate the strategies employed by others; and
- effectively communicate your plans to regulators who are less comfortable with pollution prevention than with old ideas about pollution control.

This session is planned as a workshop/panel activity for the presentation of state of the art, yet practical advice, information, and experience, with problem solving as the focus. Integration of environmental concerns into corporate business strategy can move away from past painful corporate experiences with: 1. burdensome regulations, 2. penalties and/or prosecutions for non-compliance, 3. expensive disposal and/or remediation costs, and 4. harm to a company's reputation.

The Association of Iron and Steel Engineer's President, Thomas J. Usher, in his 1990 Presidential Message said: "The years ahead... will witness a time of heightened environmental concern. We have legitimate questions about certain environmental proposals under consideration in Washington and several state capitols. A major mission, for the industry's technical leadership, however, will be one of moving American steel to the forefront of environmental progress."

Mr. Usher continued by saying, "The industry must move ahead of environmental regulations and attempt to exceed the air and water quality performance legally required. We must design and install new facilities with a positive environmental focus. We must demonstrate that competitive and environmental advances can go hand and hand."

Today, cost effective compliance, aggressive waste minimization and recycling are necessary components of successful steel operations. Discussions will encompass the wide range of legal/environmental issues, including, but not limited to, waste minimization, treatment, material handling, recycling, air quality standards and site remediation.

Ecologist urges farmers to cut pesticide use

'I'm not a purist, saying we've got to do away with pesticides. But we've got to target them very carefully.'

— Gary Barrett,
Miami University ecologist

OXFORD, O. (AP) — Farmers could do a better job of controlling crop-eating insects by using less pesticide and planting alternating strips of crops, a university ecologist says.

Farmers who limit their use of pesticides and target their applications more carefully can save money by reducing use of chemicals and fuel-driven machinery, according to Gary Barrett, an ecology professor at Miami University.

Barrett was raised on a farm near Princeton, Ind. He is co-director of Miami's Ecology Research Center, which conducts research on experimental farm plots.

"I'm not a purist, saying we've got to do away with pesticides. But we've got to target them very carefully," he said.

Jack Hill, vice president of the Ohio Farm Bureau Federation, said his organization recognized the need to improve farming techniques. Some farmers already are doing what Barrett suggests, Hill said.

Hill said a recent survey of member families showed they generally were working to reduce fuel and pesticide use by an annual average of 5% to 10%.

But he cautioned against what he termed simplistic solutions, saying more research needs to be done on pesticide and land management.

"There is a mentality out there among farmers that they want to do it cheaper and better," Hill said. "Everybody in agriculture is working toward doing it better. We've got a lot of work to do."

More judicious use of pesticides can help reduce land contamination and the tendency for insect pests to develop immunity to the chemical sprays, Barrett said. The use of pesticides has increased steadily since the 1940s during an era of cheaper fuels and pesticides, when farmers pushed for higher crop yields, he said.

Farmers could also benefit from planting alternate strips of crops across fields, with strips of open land or fences between them to act as barriers, Barrett said.

"If you get an insect pest in there, they can radiate out and move across that field very quickly," he said. "Many insects build up a resistance to the pesticides because they produce so many offspring so quickly."

More than 440 insect and mite species are immune to at least some of the pesticides designed to kill them, Barrett said.

Overusing pesticides can kill off spiders, praying mantises and some beetles that help farmers by devouring crop-eating insects, he said.

"There are less valuable insects to regulate them. Consequently, you end up spraying again to keep your insects down,' he said.

City to ask court to halt operations at Laidlaw plant

By **HARRY STAINER**
STAFF WRITER

Mayor Michael R. White said yesterday the city would seek a court order tomorrow to shut down operations at Laidlaw Environmental Services Inc. because it is a health nuisance.

White said that he decided to declare the waste treatment plant operations on Bessemer Ave. "an imminent threat to the health" of people living and working nearby.

The mayor said he reached the decision after conferring with the city's health and law departments. White said the Health Department on Friday gave him a study on the problems at the plant.

The troubled plant, formerly GSX Chemical Services of Ohio Inc., has a history of accidents, including two in three days during the past week. On Thursday, a container of nitric-acid waste gave off a poisonous orange vapor, prompting the evacuation of the plant. On Tuesday, workers at Laidlaw and a nearby business were evacuated after a spill of acidic waste water.

White said he would seek a temporary restraining order from the Housing Court division of Cleveland Municipal Court to stop the plant from operating. The city also will intervene on the side of Ohio EPA Director Richard L. Shank's efforts to have the Environmental Protection Agency shut down the Laidlaw plant, White said.

Shank last month revoked the operating license of Laidlaw, but the plant remains open while the company appeals the action.

White said repeated spills at the plant over a long period of time indicated a lack of proper training of employees.

The mayor also said he was upset by the company's failure to give the Fire Department the proper chemical designations of materials stored on the site and to say what chemicals are stored where.

A company spokesman could not be reached for comment.

CANADIAN GOVERNMENT TRADE OFFICE

CINCINNATI, OHIO

Canadian Government Trade Office

Cincinnati, Ohio

There is no doubt that the years of awareness-raising on environmental issues is bearing fruit in southern Ohio and Kentucky. But it is more the visibility of the actual waste than the visibility of the issues in the press that is bringing about changes.

As in the rest of the United States, community recycling programs have begun for glass, plastics, aluminum, and bi-metal cans. As a result of the response, we have seen extended life given to the landfills in the states. There are state bills introduced to ban out-of-state solid waste from Kentucky and to outlaw the landfill disposal of grass clippings and leaves in the state of Ohio.

There are significant markets for many services and products in the southern Ohio and Kentucky region served by the Cincinnati Office.

Not only are environmental consultants needed to set up the recycling programs, design better and safer landfills, remove and treat chemically-abused lands, etc., but there is a significant market for conversion technologies to deal with the huge glut of recyclable materials already being collected. The storage and sales of these items are straining the great intentions of many communities.

Moreover, it is not just the currently-visible environmental concerns like nuclear plant cleanups and adequate landfill management that need attention. We are still beset with the smoke pollution, reclamation of coal mines, industrial water pollution and provision of clean drinking water from ground and river waters.

Moreover, the shift from nuclear to coal-fired power plants have brought opportunities for scrubbers and ash pit management needs that have never been adequately resolved. And as more and more communities offer resistance to any type of waste disposal facility being located in their neighborhoods, new, more creative means of disposal must be sought out.

Cleanup plan sets options for Fernald

BY M.A.J. McKENNA
The Cincinnati Enquirer

Friday [illegible] D-2

The U.S. Department of Energy has released the first preliminary cleanup plan for a section of the Fernald uranium plant, the beginning of a flood of documents that will be issued in the next 18 months.

The plan sets out three potential solutions for the six in-ground pits in Fernald's northwest corner that contain radioactive waste. But the plan is preliminary and doesn't solve all the problems the pits pose, said Graham Mitchell, Fernald team leader for the Ohio Environmental Protection Agency (OEPA).

This week's report, the first of 25, lists three alternatives for cleaning up the pits, which hold a variety of radioactive and chemical waste.

Several of the pits have leaked through their liners into the ground below. The two open pits also have contaminated rainwater that has fallen near them and then run into other areas of the plant.

The alternatives are:

- Compacting the pit contents by dropping weights of 5 to 40 tons onto the surface, theoretically making it less likely that contamination would percolate through them; capping the pits; and installing storm-water controls.
- Scooping out the contents, treating and packaging it and storing it on the plant site.
- Scooping out and treating the waste, packaging it and shipping it to an undetermined location away from Fernald.

There are problems with the approaches, Mitchell said.

"It's hard to imagine leaving the material in place, knowing that the bottom of the pits are leaking," he said, "but we have to look at what the options are."

Removing the waste could be equally problematic, he said. Engineers have debated for several years whether digging up the pit contents would pose more or less risk than leaving them in place.

"There will be a further screening," Mitchell said. "I have to be a little bit open-minded at this point because it's just a list of alternatives."

The U.S. and Ohio EPAs have 30 days to comment on the proposal.

Suspected leak found

Two underground storage tanks at the Fernald uranium-processing plant are suspected of leaking gasoline and kerosene into the surrounding soil, according to a report from the U.S. Department of Energy given Thursday to the U.S. Environmental Protection Agency.

The suspected leakage was found during digging around the tanks, a preliminary step to removing them, the report said. Nearby soil was found to be contaminated.

According to the report, the Ohio Fire Marshal's office was notified Tuesday of the contamination.

— M.A.J. McKENNA

Company drops 7-year battle to build waste incinerator in Lawrence County

Associated Press

LOUISA, Ky. — PyroChem Inc. has scrapped plans to build a $5 million hazardous-waste incinerator in Lawrence County, much to the delight of local environmentalists.

"It proved that when people stick together, it doesn't take big money to win. It takes a lot of people power," said Patty Wallace of Louisa, a plant opponent.

Wallace, chairwoman of Kentuckians For The Commonwealth, said she was delighted the seven-year fight was over.

PyroChem President Thomas V. Bumbarger withdrew the application for a construction permit in a July 25 letter to Carl Bradley, secretary of the state Cabinet for Natural Resources and Environmental Protection.

Bumbarger said recent court decisions led PyroChem to conclude "the Lawrence County facility is no longer economically feasible."

The company applied for a construction permit in 1983.

Several environmental groups questioned the reliability of the incineration technology and alleged PyroChem officials engaged in back-door political maneuvering.

"They came in here and lied to us and misled us," said Roy G. Holbrook, a member of Lawrence Fiscal Court from 1978 to 1985. "They came in here and said they wanted to build a recycling plant."

PyroChem filed a 1988 federal lawsuit challenging a Kentucky law that allowed fiscal courts to block the opening of hazardous-waste incinerators.

U.S. District Judge William O. Bertelsman said in March that he would not rule on the lawsuit until the U.S. Environmental Protection Agency completed its review of the state law. The EPA has been reviewing the law since 1988.

PyroChem also sued members of Lawrence Fiscal Court, contending a 1985 zoning ordinance was passed only to block the incinerator. Lawrence Circuit Judge James A. Knight ruled in May that PyroChem failed to prove the allegation.

"I think PyroChem saw the handwriting on the wall," said Joe F. Childers of Frankfort, an attorney for a Lawrence County citizens group that opposed the burner.

PyroChem vice president Helena Holt declined to elaborate on the company's decision.

"The letter we sent (to Bradley) speaks for itself," she said.

Wallace warned other environmental groups not to let their guard down. "We've been bombarded with out-of-state garbage coming in," she said. "We're not through fighting this type of industry. I think we've just begun to fight."

Landfill owners face Nov. 30 DNR deadline

27 Aug
Gazette

By Paul Nyden
STAFF WRITER

The Division of Natural Resources is sending a letter to landfill owners today warning they must meet new environmental standards by Nov. 30 or shut down.

Landfill operators must install sediment control ponds, leachate management systems and ground water monitoring wells. DNR Director Ed Hamrick said the letter is another step in the process to make all state landfills comply with laws passed between 1987 and 1989.

"We are continuing our program to protect the state's ground and surface water from landfill pollution," Hamrick said. "These regulations are a significant step toward that goal. Landfills with these safeguards will protect our surface and ground water which will in turn protect the environment and health of our citizens."

Landfills failing to comply with the November deadline will be closed, Hamrick said.

For several years environmental activists — including Norm Steenstra, head of the West Virginia Environmental Council, and Morgantown geologist Richard diPretoro — have pressured DNR to enforce landfill laws.

Steenstra

Steenstra said, "DNR has been trying to get these things in effect for the past six or seven years. They have granted postponements and no one has taken them seriously. This letter shows the time for landfills to modernize is finally here.

"There will be no more postponements," Steenstra said. "While it may create temporary local crises, there is a landfill over-capacity in the state. It may mean some shifting around between landfills. But it is not going to create a statewide crisis."

In June, Hamrick closed two landfills — Kanawha Western and Montgomery — for failing to submit plans about how they would comply with the new regulations.

The regulations require landfills to control leachate, the contaminated liquids that run off dumps and landfills after rains. Landfill owners must prevent leachate from escaping at all, or must treat it to meet water quality standards before discharging it into streams.

Leachate may be treated by piping it into local sewer lines for treatment. It may also be treated by transporting it to an off-site treatment plant or by spraying it back on the landfill.

Landfill owners must also install at least four wells to monitor the quality of ground water. Diversion ditches and sediment ponds must be used to control sedimentation into local streams.

All areas on a landfill, other than those actively used for trash disposal, must be revegetated to prevent erosion and sedimentation.

Kim Pritchard, a DNR waste management official, said most landfills in the state are trying to implement the regulations.

Additional regulations will go into effect in 1991 and 1992. By Nov. 30, 1991, landfills must build a soil liner, usually made of clay, to prevent contaminated leachate from seeping into ground water.

By Nov. 30, 1992, landfills must have a composite liner, approved by the DNR. A composite liner consists of a synthetic liner in addition to the soil liner.

Steenstra said the state has more than 300 potential Superfund sites. "The major threat at these sites has been ground water contamination. Going to a double liner system will help protect the ground water. Each landfill site is still a potential liability in the future."

Steenstra believes the new regulations may make it less attractive to dump out-of-state garbage in West Virginia.

"These regulations will force the flagrantly bad operators to shut down," Steenstra said. "In order to continue, landfill operators must demonstrate they have the capital to make these improvements."

Group aims to clean up in Mason

City wants its growth, and environment, too

BY RANDY McNUTT
The Cincinnati Enquirer

The city of Mason, concerned about increased growth, has started planning for ways to maintain its environment.

Members of Mason's Environmental Advisory Commission, a group of officials and citizens appointed by city council last month to check on the city's environment, have been out to area landfills and recycling centers.

Their purpose is to learn more about how these facilities work, so Mason can start environmental programs in the future.

By January, Mason officials hope to have a plan to start a local recycling program.

Davis

"We started the commission to foster a greater awareness of our environment among the people," Councilwoman Betty Davis said Wednesday.

The group will meet regularly to study environmental issues and make recommendations to city council.

Assistant City Manager Patrick Ibarra said council recently appointed two of its members, Davis and Rex Cochran, to the commission with nine citizens.

Mason, in southern Warren County, is growing steadily. New industries are moving in, and developers are building homes and apartment complexes for people who want easy access to Interstate 71.

"We know we'll continue to have growth in Mason," Davis said. "To be negative about it wouldn't do any good. We want to encourage everybody in the community, including business people and school officials, to get involved."

Davis said the commission has established three subcommittees: waste management, education, and preservation and conservation.

One of the city's goals is to establish a recycling program, possibly as soon as next year, she said. "It might be a curbsite or drop-off facility," she said.

Whatever method is selected, she said, "It's critical to look at recycling right away. With our increasing growth, we'll have to recycle."

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Endorsements turn some environmentalists green

By Barry Meier

NEW YORK TIMES SERVICE

As big manufacturers start to pay environmental groups to help promote products like toilet paper and beer, the new marketing strategy is dividing environmental advocates.

Some groups say they have rejected lucrative offers and criticize others for lending their names to products that cannot be recycled or to alcohol beverages.

Other advocates say they fear that environmental endorsements may make consumers lose respect for the movement.

Sears and Coca-Cola are among the companies that pay a fee or a percentage of sales to environmental groups whose names they can then use in promotions and advertising.

Among the products that have marketing arrangements with environmental groups are Minute Maid juices, Tanqueray gin and Canon copiers.

"You hope the consumer takes away a little better feeling about your brand name and product," said Dan A. Schafer, a spokesman for Minute Maid, which is owned by Coca-Cola.

> “We'll lose our credibility if everything in the marketplace has the imprimatur of an environmental group.”
>
> John Bell,
> Friends of the Earth spokesman

The Charleston Gazette-
8-A 8-12,90

Coca-Cola is running a promotion with the National Parks and Conservation Association, a private group in Washington.

In it, buyers of unrefrigerated Minute Maid juices can help pay for the planting of trees in Redwood National Park in California. The cost to the consumer for each tree is 75 cents, which the company matches; it has also paid $10,000 to the association, Schafer said.

The new marketing efforts probably will not raise product prices. But several environmental advocates said they may further antagonize consumers who feel they have been misled by false claims about product biodegradability.

"We'll lose our credibility if everything in the marketplace has the imprimatur of an environmental group," said John Bell, a spokesman for Friends of the Earth in Washington.

Rosemary Carroll, the director of development for the Sierra Club in San Francisco, said: "There is a lot of schlock out there right now. We've been approached by manufacturers of tampons, toilet paper and automotive parts, and we are not in the position to evaluate whether they are environmentally sensitive or not."

Friends of the Earth recently passed up $25,000 from Marla Maples as part of a deal in which the group's name would be used in promoting No Excuses jeans, for which Maples serves as a spokeswoman.

Michael Clark, the group's president, said the offer was not accepted because the group did not have enough time to assess the manufacturer's environmental record.

Previously, marketing that drew on environmental concerns was limited to companies closely identified with natural products or the outdoors: Ben & Jerry's Homemade Inc., Patagonia Inc. and the Body Shop, to name a few.

But big consumer companies have entered the arena, driven by the so-called "green" marketing movement.

Some groups, like the Sierra Club, are developing guidelines on the kinds of products they would promote.

Others, like the Environmental Defense Fund in New York, have decided to steer clear of the arrangements.

"We have to be an independent force, free to criticize who we want," said Fred Krupp, the fund's executive director.

Many environmental leaders say they do not object to such marketing arrangements, because they can help raise money for, and awareness about, an important cause. But some said they were concerned that groups might sell their name too cheaply or to the wrong company.

Cincy Enquirer 7 Sept

Smog fighters put heat on industry

BY SCOTT BURGINS
The Cincinnati Enquirer

Area polluters

1. Armco Inc.'s steel plant in Middletown	1,218 tons*
2. Jefferson-Smurfit Corp., Lockland	936
3. Formica Corp., Evendale	729
4. Steelcraft Mfg. Co., Blue Ash	720
5. Seagrams & Sons, Evendale	715
6. Heekin Can Co., Blue Ash	662
7. Hilton Davis Co., Bond Hill	619
8. General Electric, Evendale	551
9. Armco Inc.'s paint plant in Middletown	413
10. Multi-Color Corp., Linwood	399

Emissions are for hydrocarbons, a component of smog

Air pollution researchers have determined which companies contribute the most to Greater Cincinnati's smog problem and are pushing them to reduce emissions.

But the Southwestern Ohio Air Pollution Control Agency (SWOAPCA) says its options are limited because it is not illegal to release most of the polluting chemicals, called hydrocarbons.

"The laws are so loosely written that a company can comply with them and still produce enough to be a nuisance or contribute to the ozone problem," Bill Ausdenmoore, an air quality technician for SWOAPCA, said Thursday.

Cincinnati is among the 101 U.S. cities whose air is too thick with ozone, the main component of smog, the Environmental Protection Agency has said. Because of the ozone, Hamilton and Butler county autos made after 1979 must have an $8 test yearly of their air-pollution control equipment.

Ozone is not a single chemical but a group of pollutants that cook in sunlight. It can cause coughing, chest pain and lung damage. Carbon monoxide from automobiles makes up more than 50% of ozone's contents, Ausdenmoore said.

Car-pooling and the use of mass transit would greatly help the problem, but "People won't do it," he said.

So, the agency for now is concentrating on the companies. The information for the study was gathered from reports made by the firms.

The Armco plant in Middletown is the biggest contributor, he said. "But they give no indication that they're going to do any more than meet compliance. And they *can* do more, it's that simple."

No representatives from Armco reached Thursday said they were prepared to talk about the emissions.

Mike Arozarena, environmental engineer for Formica Corp. of Evendale, ranked third in emissions, said most of the company's hydrocarbons are burned off in 2,000° boilers, but some escape through smokestacks and vents.

SWOAPCA hopes public pressure will get more companies to install after-burners and other anti-pollution equipment.

The city also has asked SWOAPCA and the Ohio Environmental Protection Agency to investigate Carver Coating Co., a recently discovered source of hydrocarbons in Lower Price Hill that will release 8 tons of the chemical a year.

SWOAPCA ranked the top 30 emitters based on releases of hydrocarbons in 1988. The next survey of hydrocarbon releases will be in 1991.

Island Creek accord could become model

By Paul Nyden
INVESTIGATIVE REPORTER

Island Creek Coal Co. is blocked from opening new mines because one of its contractors abandoned a mine in Kentucky without reclaiming it. Island Creek may face similar problems with several other contractors in West Virginia and Kentucky.

Island Creek's problems began July 5 when the Kentucky Department of Surface Mining determined it controlled an underground mine operated by Price Coal Co. In January 1989, Kentucky authorities forfeited a reclamation bond at the Price Coal Mine and revoked its permit. Island Creek's ties to Price mean neither company can get new permits anywhere in the nation.

Richard C. Harris, president of Island Creek Coal, signed a consent order with Kentucky authorities on Aug. 20 agreeing to post a $100,000 reclamation bond to guarantee reclamation at the Price mine. Harris also agreed to prepare a list of other contractors that might have reclamation problems.

The agreement would have removed Island Creek from OSM's Applicant Violator System and allowed it to get new permits.

Frank Dickerson, commissioner of law for Kentucky's Natural Resources and Environmental Protection Cabinet, said Thursday, "The Kentucky agreement was contingent on OSM accepting its terms. OSM has not. It has gone back into negotiations in an attempt to get an agreed order to the satisfaction of all parties."

The Island Creek agreement could become a national model for other major coal companies that use contractors to mine coal. Alan Cole, an OSM spokesman in Washington, said, "There are intensive negotiations going on ... to work out a suitable agreement about ownership and control.

"The agreement will set a precedent for other similarly situated large companies that have a number of contractors," Cole said.

Cole said the negotiations involve officials from Island Creek, OSM, Kentucky and the West Virginia Division of Energy. Jack Holbrook, an OSM official on loan to DOE, said Thursday, "We have been asked to review some documents by OSM. We will review them when they arrive."

Carol Helderlein, Island Creek's spokeswoman in Lexington, Ky., confirmed the company is negotiating with state and federal regulatory authorities. "OSM is reviewing the [Kentucky] agreement and has some questions. They will be getting back to us in a day or two."

In the Aug. 20 agreement with Kentucky authorities, Island Creek agreed to submit a reclamation plan for the Price Coal Mine, including provisions for backfilling, grading, controlling water pollution, eliminating a highwall and revegetation.

The agreement also required Island Creek "to research its records and compile a list of surface coal mining operations ... permitted in Kentucky to coal mining contractors with which Island Creek Coal contracted since May 3, 1978."

The list would not include fully released permits from reclaimed mines.

After Island Creek prepares the list, regulatory and company officials would then "attempt to reach agreement regarding Island Creek Coal's responsibility, if any, for such site(s)" and establish reclamation plans for unreclaimed mines.

At present, Island Creek has at least one permit application pending in West Virginia. DOE officials said no permits will be issued as long as Island Creek is on OSM's permit-block list.

In the past, Island Creek and other large coal companies have argued they are not responsible for operations and environmental violations by their contractors.

Washington environmental lawyer L. Thomas Galloway said, "This claim has been rejected by the federal courts and by the federal Office of Surface Mining in both Democratic and Republican administrations."

Island Creek Coal and OSM officials said they do not expect to reach a new agreement before next week, at the earliest.

A-7 8-14-90 Cinti Enquirer

Clay advised to cork Fernald silos

BY ELIZABETH NEUS
The Cincinnati Enquirer

The U.S. Department of Energy (DOE) wants to cap waste inside silos at the Fernald uranium-processing plant with 4 feet of clay, an interim method of stopping radon emissions while searching for final cleanup solutions.

"(The clay cap) satisfies the two main criteria — reducing radon and protecting against tornadoes," said Jack Craig, DOE project manager for the K-65 silos, considered one of Fernald's most dangerous pollution problems.

The concrete silos, which contain waste from the 1940s Manhattan Project to develop a nuclear bomb, emit radon gas, a potential cancer-causing agent linked to lung cancer.

Bentonite clay — which hardens to the consistency of concrete — would retain the radon even if the silos' domes were destroyed by a tornado, he said.

Weather concerns Fernald's neighbors, but it received new attention after a June 2 tornado touched down 1½ miles from the plant. Fernald is 18 miles from Cincinnati, in northwest Hamilton County.

The interim plan, which must still be approved by the Environmental Protection Agency (EPA), will be discussed at a public workshop Thursday at the Plantation Restaurant, 9660 Dry Fork Road, Harrison. A public comment period ends Aug. 30.

EPA officials could not be reached for comment on the DOE's interim plan.

Other options considered for the silos included construction of a building to enclose them or a continuously operating filtration system to catch radon.

But the clay option could be completed the fastest, seemed to be the most effective, and didn't use much new or complicated technology, Craig said.

The clay would be pumped into the silos through ports at the top, and the project could be completed in about 10 months, compared to nearly three years for other methods, he said.

Using the clay also would not interfere with a number of options for final cleanup, he said. For example, if removing the waste from the silos would be chosen as the final method, the clay would just come out with it.

Or if the DOE would choose a method called vitrification, in which the contents of the silos would be melted into glass for easier storage and handling, the clay would be melted along with it, he said.

Scott's plans may include incinerator if company chooses Kentucky site

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[illegible]

Associated Press

EVANSVILLE, Ind. — Scott Paper Co. suggested it may build an incinerator to burn 220 tons of sludge daily if its proposed Midwest paper mill is built near Owensboro, Ky.

Scott is considering two sites along the Ohio River — at Newman, Ky., near Owensboro, and in Posey County, west of Evansville — for the $200 million tissue mill that would employ 300 to 500 people and use a high volume of recycled paper in production.

In the company's first environmental filing with the Kentucky Natural Resources and Environmental Protection Cabinet, Scott assumed it would operate an incinerator to help reduce the 622 tons of sludge it would produce daily.

Removing much of the water would reduce the sludge to about 342 tons. Incineration would reduce it further to 122 tons, the company said in the filing received Friday by the environmental agency.

A Posey County environmental group, Save Our Land and Environment, has said it will oppose Scott's plans if the company proposes an incinerator on that site.

Other environmentalists have questioned the incineration of heavy metals the company has said would be in its sludge.

Scott spokesman Mike Kilpatric said the Philadelphia-based company has not decided whether an incinerator would be located at its Midwest mill.

"We haven't made a final decision on the incinerator, but because of the lead time on the filing, the document was filed ... with the incineration assumption. We don't want to close out on incineration," Kilpatric said.

The filing was made for a landfill at the Newman site. Scott proposed operating a 60-acre landfill with a capacity of 6 million cubic yards, according to the filing.

Scott has not yet filed in Posey County. Kentucky requires a three-step filing process; an Indiana permit would require a single filing.

"It's two different application processes," Kilpatric said. "We're not favoring one (site) over the other."

In the Kentucky filing, Scott estimated the landfill would meet its needs for 29 years. Kilpatric said that estimate was made under the assumption that an incinerator would be used.

The first step of the three-part Kentucky filing is a "notice of intent to apply for a solid-waste permit" and does not require highly detailed information from Scott. For instance, in its first filing, the company described its waste stream simply as non-hazardous ash made from sludge consisting of clay, wood, fiber and water.

The filing noted that several environmental factors could be a concern at the Owensboro site.

The Kentucky State Nature Preserves Commission is investigating the site because the Indiana Bat, an endangered species, has been seen on the property.

Also, the Kentucky Heritage Council has said seven areas of archaeological interest, including six containing American Indian artifacts, might be on the site.

The Army Corps of Engineers is investigating whether the landfill area encroaches on property that previously may have been wetlands but has been converted to farm use.

These factors will be evaluated for the environmental impact that the mill and landfill would have, said Annette Hayden, a spokeswoman for the Kentucky Natural Resources Cabinet.

The cabinet has 30 days to review Scott's initial filing. The first filing will be followed by administrative and technical filings, which require much more detailed information about the wastes generated and the construction of the landfill, Hayden said.

APPENDIX

TECHNOLOGY TRANSFER ASSISTANCE ORGANIZATIONS

OHIO/PENNSYLVANIA

OHIO - ENVIRONMENTAL TECHNOLOGY ASSISTANCE ORGANIZATIONS

Edison Polymer Innovation Corporation (EPIC)
3505 E. Royalton Road
Broadview Heights, Ohio 44147
(216) 838-5015

Institute of Advanced Manufacturing Sciences, Inc. (IAMS)
111 Edison Drive
Cincinnati, Ohio 45216
(513) 948-2000

Edison Industrial Systems Center (EISC)
1700 N. Westwood Avenue
Toledo, Ohio 43607-1270
(419) 531-8610

Ohio Technology Transfer Organization (OTTO)
77 S. High Street, 26th Floor
Columbus, Ohio 43215
(614) 466-4292

Office of Litter Prevention & Recycling
Ohio Department of Natural Resources
Fountain Square
Columbus, Ohio 43224-1387
(614) 265-6333

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APPLICATIONS
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- Established 1988
- Not-for-profit Corporation
- Located at U-PARC
- Initial Funding -- $9 million Cooperative Agreement with EPA
- Other Funding Sources

  Industry, State, and Foundations

NETAC

FIRST YEAR ACTIVITIES

- Organizational development
- Environmental technology needs assessment
- Technology screening criteria and procedure
- Recommended commercialization processes
- Identification of candidate technologies
- Permitting of test facilities
- Client services

NETAC

THE NEED FOR NETAC

Commercialization of new environmental technologies is being inhibited by...

- Regulatory uncertainties
- Changing requirements
- Lack of public and regulatory confidence
- Adversary positions
- Uncertain market size and structure
- High investment risk

NETAC

NETAC'S ROLE

- Neutral partnership
- Focus on priority environmental needs
- Use credible evaluation parameters
- Provide independent evaluations
- Provide commercialization assistance
- Reduce investment risks

CLIENT SERVICES

- Technology assessments
- Testing and evaluation
- Market and financial assessments
- Regulatory and legal assessments
- Information clearinghouse
- Commercialization assistance

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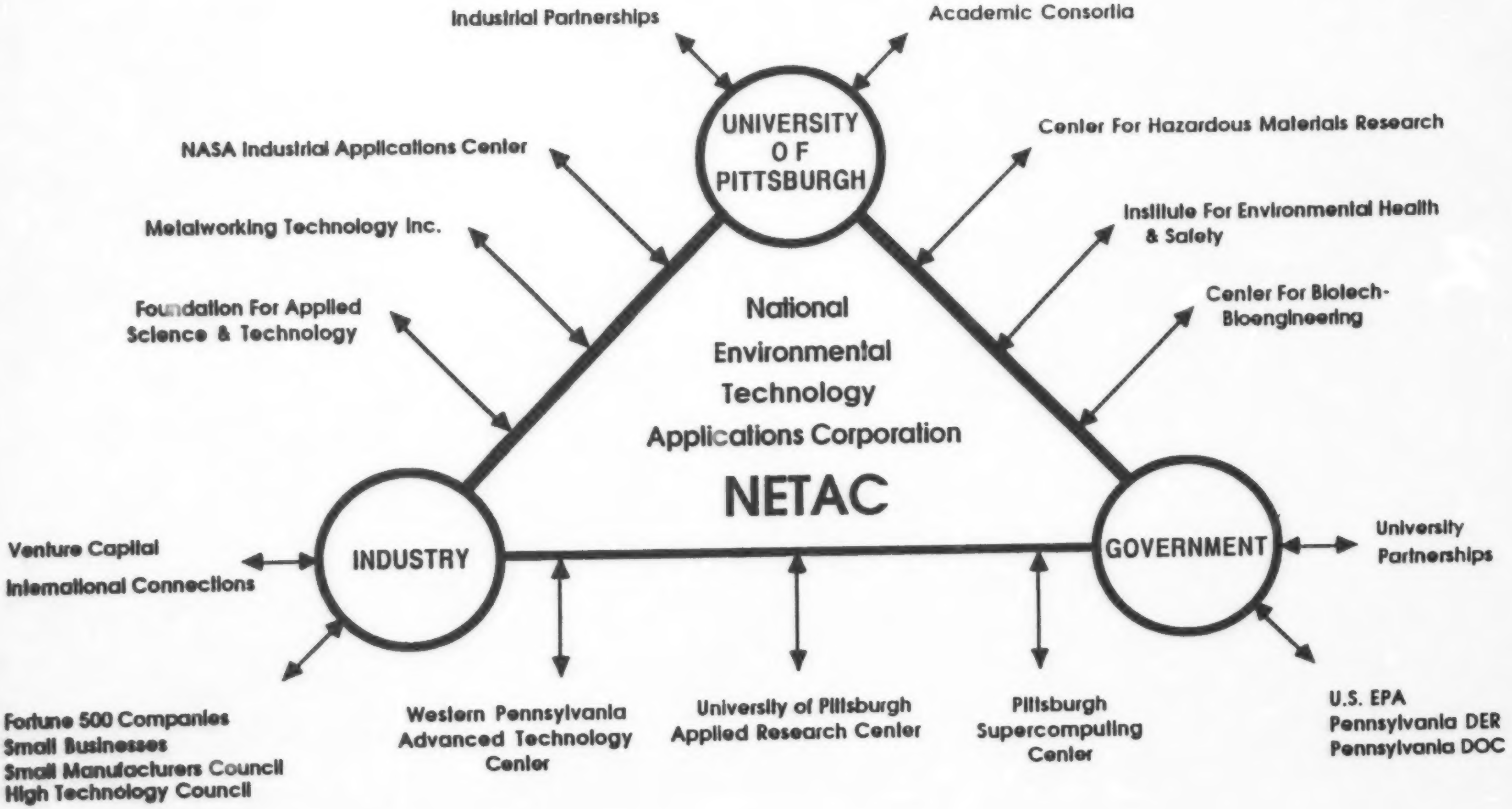
Industrial Partnerships
Academic Consortia
UNIVERSITY OF PITTSBURGH
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Metalworking Technology Inc.
Foundation For Applied Science & Technology
Center For Hazardous Materials Research
Institute For Environmental Health & Safety
Center For Biotech-Bioengineering
National Environmental Technology Applications Corporation
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Venture Capital
International Connections
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Fortune 500 Companies
Small Businesses
Small Manufacturers Council
High Technology Council
Western Pennsylvania Advanced Technology Center
University of Pittsburgh Applied Research Center
Pittsburgh Supercomputing Center
U.S. EPA
Pennsylvania DER
Pennsylvania DOC